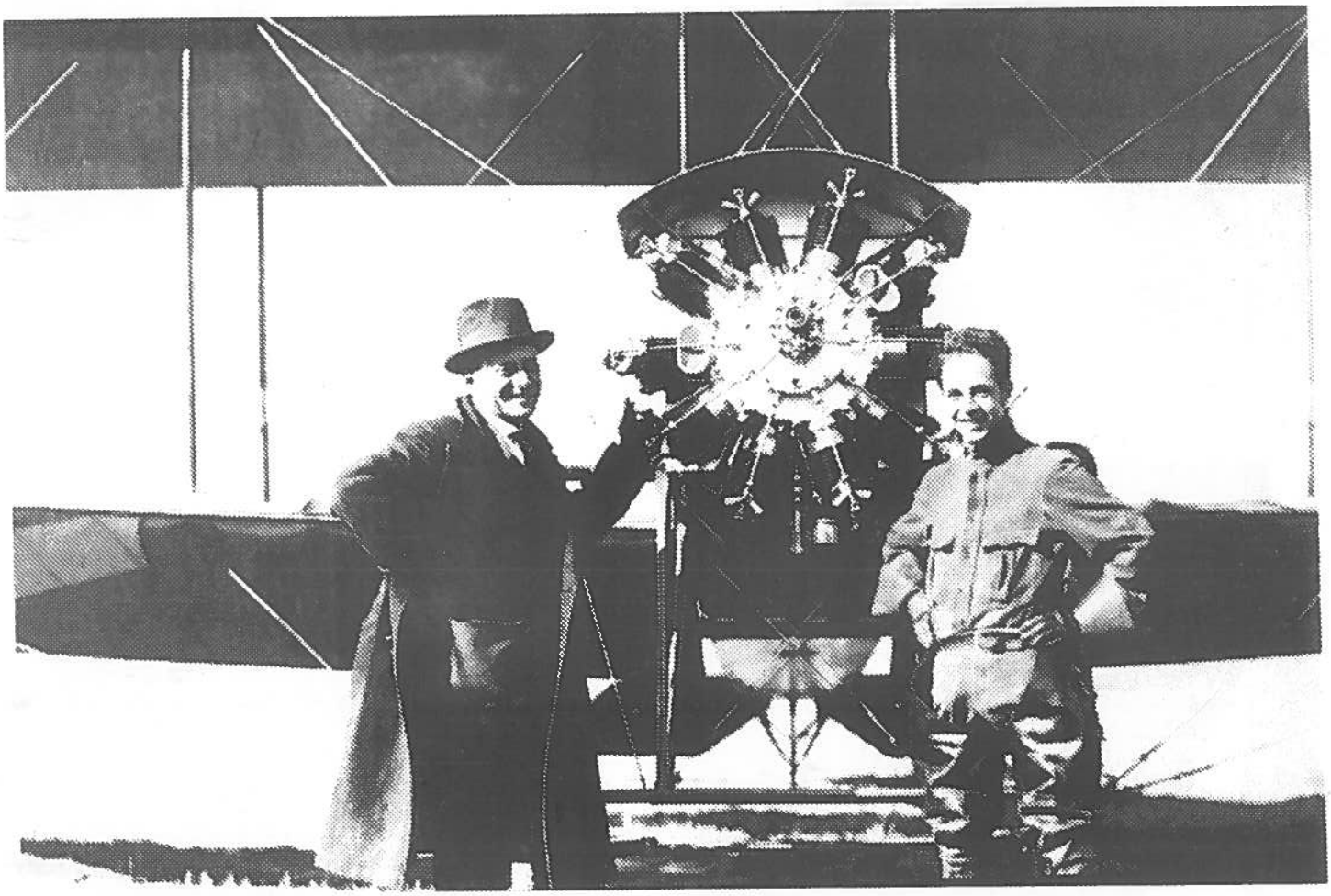
small air forces observer

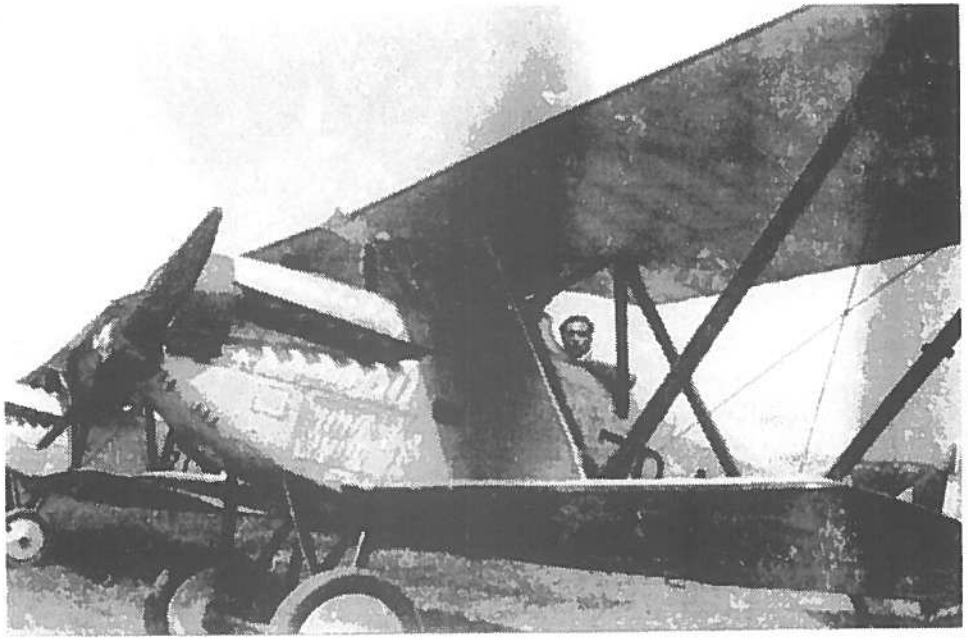
vol. 29 no. 1 (113)
July 2005

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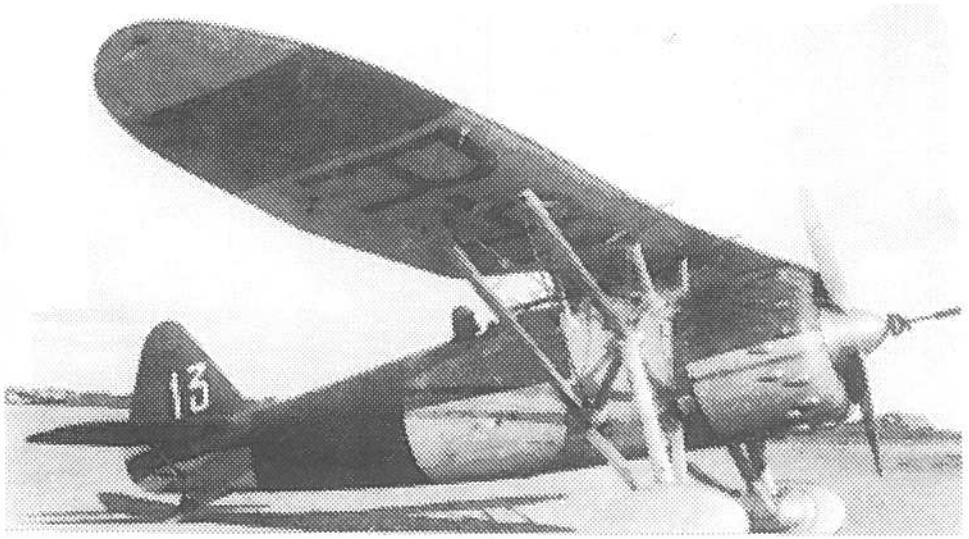


Dutch Air Arms Camouflage & Marking
Dutch Air Arms – May 1940 (Part 4)
Modeling the Hellenic Gladiator
Red Italian Pilot
Mexico's TNCA
Greek SM.79

vol. 29 no. 1 (113)
July 2005



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SMALL AIR FORCES OBSERVER

The Journal of the Small Air Forces Clearing House

E-Mail: safo@redshift.com

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SAFO EDITORIAL POLICY: The purpose of the SAFCH is to "promote interest in the history and modeling of the aircraft of the smaller countries". In support of this goal, the SAFCH encourages international cooperation in researching aviation history, both military and civil, from all periods of time, and for all the smaller countries. In return for this support, members are asked to submit occasional progress reports for publication in the SAFO. While the final results should appear in the most prestigious publication possible, it is requested that the SAFCH be mentioned (with address) in the article and that SAFO be afforded the opportunity of reprinting the material. Article published in SAFO can be reprinted provided permission of the author is obtained and the SAFO is identified in the reprint.

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INFORMATION FOR AUTHORS: Manuscripts may be submitted in any form; authors whose first language is not English may submit a rough translation of the text and the editorial office will put it into good English. Authors using a computer should send the manuscript either via e-mail or on disc. Photo should be black and white prints although color prints can be used. If you want any photos returned, please mark "Return" on the back. All art work must be ready for printing. The layout should be such than when a page is reduced (if necessary) the drawing should fit into the 7.5 inch by 10 inch working area of the final page. Art work that does not fit this requirement will have to be cut and pasted to fit; no problem, but things might not look exactly as you want them to look. All work for the SAFO is voluntary and no payment can be made for published material. However, authors are encouraged to submit their articles to commercial publisher for reprinting provided recognition is given to the SAFCH.

TRANLATION SERVICE: The following people have offered there services in translating articles for publication in SAFO: Inigo Artamendi (Spanish). Igor Gordelanov (Russian, Ukrainian, Byelorussian, Bulgarian, Polish, & Czech). Yoshihiro Aoyama (Japanese). If you need help translating material for a SAFO article, contact the editorial office and I'll give the address of an appropriate translator.

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PAYPAL: It is now possible to pay for yout SAFO subscription and purchases from the Sales List through PatPal. Address patment to safo@redshift.com, and 5% to cover PayPal fees.

EDITORIAL: There was no room for the Sales List in this issue. To get an up-yo-date Sales List, contact the editorial office at the E-mail address in the masthead.

COVER COMMENTS: A pair of unidentified persons before a Serei A 55 biplane with a nice view of the Italian Anzani engine. Santiago Flores tells the story of Mexico's Talleres Nacionales de Construcciones Aeronauticas (TNCA) beginning on page 7.

-wants&disposals-wants&disposals-wants&disposals-wants&disposals-wants&disposals-wants&disposals-wants&disposals- wants&disposals-

Oldies, But Goodies: The following long-out-of-print decals were sent to the SAFCH by Ron Ferreyra of AllScaleModels. They are available from the SAFCH Sales Service: 1/32 Revell/Kikoler (Brazil) Mirage 5 France & Israel $5.00; 1/48 ABT Free French Lysander $4.00; 1/48 Aerophile Romanian Bf-109E $5.00; 1/48 Aerophile P-38 'Yippee' $5.00; 1/48 ABT French F4U-7, Suez, $5.00; 1/48 Nordan Fw-190A-3 (Luftwaffe and Turkey) $4.00; and 1/72 ABT French Grouppe de Reconnaissance P-38, P-51K, & Mirage IIIR $5.00; 1/72 Frog for Blackburn Shark British and Portuguese $4.00. Please send orders to the SAFCH editorial office.

Focke-Wulf Fw 58 Book:I was invited to co-write a book about this plane. Our main desire is to produce a book with lots of photos, covering from it's creation until post war use. We have some nice photos of Brazilian Fw 58, but now must find Luftwaffe and foreign machines images to use. All material will be fully credited. If you can help in this project please contact me at loigres@ig.com.br or loigres@gmail.com. We want to use the most updated information about the Fw 58 so corrections on previous available books are very welcomed. Please feel free to contact me anytime about questions on this project. Sergio Luis dos Santos Rio de Janeiro - Brasil

Contents

1. Prototype construction and development.
2. Technical details - Structure, complete interior coverage, fuel and oil lines, instruments, undercarriage - with detailed pics and diagrams..
3. Luftwaffe use and foreign use: Training, liaison, ambulance, night fighter plus civilian passenger use. Captured examples. Post war use.
4. Complete walk-around from the preserved Fw 58 at Museu Aeroespacial in Rio de Janeiro.
5. Color profiles of most interesting ones.

Wanted Photos / Information:

1. D-OXLR plane with tricycle landing gear.
2. Overall white ambulance.
3. Russian front, winter camo.
4. Desert camo.
5. Liason planes
6. Foreign planes, Austria, Argentina, Bulgaria, China(?), Czechoslovakia, Denmark(?), Hungary, Netherlands, Poland, Romania, Russia(?), Slovakia, Sweden, Turkey, and others (if applicable). Other captured machines (British, USA?)
7. Experimental Night Fighter from NJG 100 and/or Night-Attack (Störkampffstaffel)
8. Training machines.
9. "Spraying" planes from Ekdo40. .
10. Detailed pics of Zielgerät GV 219d for FW 58 B-2

AUSTRALIA

AUSTRALIAN PLASTIC MODELLERS ASSOCIATION (APMA, PO Box 51, Strathfield, NSW 2135; 4 issues sea mail A$27; air mail A$30).
4-04 (24 pages) "SBD-5 Dauntless NZ5057 in RNZAF Service" one page with side-, top-, and boitom-view drawings. "Electricity Transmission Towers" 4 pages including 9 photos. (Ed: Now here is something really offbeat.) "L'Autobus Amiot" 2 pages on building the 1/72-scale Heller Amiot 141 including 2-vew drawing of camouflage scheme. "Finnish Leopard 2S" 3 pages on building the 1/72-scale Hasegawa tank including a page of camouflage drawings. "More on the Netherlands East Indies" 2 pages including a side-view drawing of a NEIAF Catalina. "Panel; Lines, Raised or Engraved? And Enhanced or Not? a ½-page discussion of the pros and cons of the various techniques of representing panel lines on model aircraft. "RAAF Spitfire Vc" ½ page with a side-view drawing of A58-255 in natural metal finish. "Mussy Miracles" 2 pages including 2 side-view drawings of RAAF Mirages in a "brown and green" camouflage pattern.
1-05 (32 pages) ""Kubus: the 1944 Warsaw Uprising Armoured Car" 4 pages including scale drawings and a drawing of the camouflage pattern. "RAF Mustage III Rocket Launchers in WWII" 3 pages including scale drawings of the launchers and 3 side-view drawings of aircraft. "British Army Vehicle Camouflage from 1938-1941 (Pt 1)" 11 pages "The Ikarus S-49" 6 pages including 3 pages on multi-view scale drawings. "Israeli Special Forces Hummer" four pages including multi-view scale drawings.

AUSTRIA

OFH NACHRICHTEN (Oesterrichishe Flugzug Historiker, Pfenninggeldf 18/2/14, A-1160 Wien. Write for free sample.)
1/05 (40 pages) "He 219 Uhus mit Jumos" 19 pages including 18 photos of a/c being restored. "DA 40D Diamond Star Produktion" 7 pages including 2 photos and list of all 150 a/c. Color photos; Austrian Vampire `5C-VF' and Vampire's instrument panel.

BRAZIL

REVISTA (IPMS Brazil, A. O. Linares Neto, Rua Oto de Alencar 26, apt 308, Tijuca - Rio de Janeiro, 20271-220 RJ) E-mail: ipmsbrasil@ieg.com.br
#111 set,/dez. de 2004 (15 pages) "O Kit Gloster Meteor F-8 da Classic Airframes" 3 pages including 2 photos of the model and 2 photos of Brazilian F-8. "Construcao y uso de um aparelho de modelar a vacuo" 6 pages on building a vacuform machine with many helpful sketches. "Bellanca 31-55 "`Skyrocket Senior'" 5 pages including 5 (poorly reproduced) photos and a scale 3-view drawing (without markings, but the color scheme is described in the text).

CANADA

RANDOM THOUGHTS (IPMS Canada, Box 626, Stn. B, Ottawa, Ontario K1P 5R7; 6 issues for US $24.00 in US $26.00 elsewhere).
29/3 (24 Pages) "W/C J.E. Storrar's Mustang Mk. IVA" 6 pages on building a 1/48-scale kit including 16 photos of the model during construction and completed. "Speculations About Blue Spitfires on Malta" 5 pages including 3 photos of the real thing and 2 photos of the completed model. "2005 Nuremberg Toy Show Listings" 2 pages. "Converting Tamiya's Me 262A-2a to a Me 262A-1a" 3 pages including 7 photos of the completed model.

CZECH REPUBLIC

REVI: Dvoumesicnik a letadlech a letcicch. REVI Publications, PO Box 143, Svojsikova 1588, 708 00 Ostrava-Poruba, Czech Republic. E-mail: redakce@revi.cz. Web site: www.revi.cz. Text in Czech and photo captions in Czech and English.
#43 Kveten 2002 (56 pages) "Soviet Hurricane" one page with color 3-view drawing (port, starboard, and top views). "Svedska valka v Kongo" 11 pages on the Saab J29 in the Congo including 14 photos, list of J29A/B used in the Congo, 2 pages of color multi-view drawings (J29B `Vit David' in natural metal and `Vit Filip' in camouflage), and 3 pages of multi-view 1/72-scale drawings.(J29B/C/F) "Velitelske oznacenie na lietadlach talianskeho vojenskeho letectva" 4 pages on Italian aircraft carrying `command pennants' including 4 photos and 2 pages of color side-view drawings (SM.79, SM.81, MC.200, CR.42, & FN.305). "Otto Parschau" 5 pages on the WWI ace including 7 photos and 5 color side-view drawing of his Fokker E.IV's. "Lindberghuv sestrel" 6 pages on Charles Lindbergh in the South West Pacific including 9 photos and 3 color side-view drawings [P-38(2) & B-25]. "Arado Ar 79" 4 pages including 7 photos. "Modely v zamerovaci" 12 pages with 33 reviews of kits, decals, and accessories including photos of box tops and an occasional photo of the aircraft. "Recenze – kritika" 2 pages with 6 book reviews including photos of book covers.
#44 Srpen 2002 (56 pages) "Cessna UC-78 Bobcat in Detail" one page with 7 color photos of aircraft in Polish museum. "Malovany oblak" 10 pages on the Nakajima C6N1 Saiun including 11 b&w photos, 6 color photos in interior details, 4 color side-view drawings, and 2 pages of 1.72-scale multi-view drawings. "Frantiskuv pruni" 5 pages on the WWII ace including 4 photos and 3 color side-view drawings of his Hurricanes. "Fokker versus Voisin" 7 pages including 10 photos and 8 color side-view drawings of Fokker E.IV (including one in Turkish markings). "Mitsubishi G4M Betty" 2 pages including one photo and 3 color side-view drawings. "Modely v zamerovaci" 12 pages with 19 reviews of kits, decals, and accessories including photos of box tops and an occasional photo of the aircraft. "Recenze – kritika" 2 pages with 7 book reviews including photos of book covers.
#45 Listopad 2002 (56 pages) "Mitsubishi J8M Shusui" 5 pages including 5 b&w photos and 12 color photos of details of museum aircraft. "`Jednadvacitky' 6. sbolp na letisti Prerov-Buchor 1973-1991" (Part 1) 6 pages on Czechoslovak MiG-21 including 6 photos and 5 color side-view drawings, and a color 3-view drawing (port, starboard, & top views). "Petljakov Pe-2" 7 pages including 7 photos and 4 color side-view drawings [Soviet (2), Finnish, & Czechoslovak]. "Photo Album 14-18 Lloyd C.V seriee 46" 2 pages with 7 photos. "Modely v zamerovaci" 11 pages with 27 reviews of kits, decals, and accessories including photos of box tops and an occasional photo of the aircraft. "Recenze – kritika" 2 pages with 6 book reviews including photos of book covers.
#56 Unor 2003 (56 pages) ""Aero L-39 Albatros in detail" one page with 5 color photos of details. "Cechoslovaci v zahranicnim odboji" 3 pages including one photo and 2 color side-view drawings of Czechoslovak Wellingtons in RAF service. "Pe-2 v Ceckoslovensku" 3 pages including 9 photos. "Neco malo o letani na L-39 Albatros" 4 pages including 4 photos and 8 color side-view drawings [Czech (4), Slovak, Libyan, US, & Soviet]. "`Jednadvacitky' 6. sbolp na letisti Prerov-Buchor 1973-1991" (Part 2) 6 pages on Czechoslovak MiG-21 including 4 b&w photos and 9 color photos. "Photo Album 14-18: Albatros D.III Oeffag seric 153 (153.01-153-111) 2 pages with 8 photos. "Modely v zamerovaci" 12 pages with 25 reviews of kits, decals, and accessories including photos of box tops and an occasional photo of the aircraft. "Recenze – kritika" 2 pages with 8 book reviews including photos of book covers.

ENGLAND

MUSHROOM MODEL MAGAZINE (Roger Wallsgrove, 36 Ver Road, Redbourn, Herts AL3 7PE, UK. £3.95 each.. Each issue has 8 pages of color. (North American subscription agent: Wise Owl Publications, 5150 Candlewood St., Suite #1, Lakewood, CA 90712-1900. $32.00. E-mail: info@wiseowlmagazines.com.
9/3 (28 pages) "Focke-Wulf Fw 58 Weihe in Bulgarian Service" 2 pages on building the 1/72 Airmodel vacuform kit in both military and civilian markings including 3 photos of the real thing and 4 photos (one in color) of the completed model. "Arkhangelshy Ar-2" 2-page history and review of the A-Model kit including 8 photos of the real thing. "Helicopters over Algeria" 2 pages with 6 side-view drawings of Frencch helicopters [HSS-1, H-34A, Alouette II, H-19, (2), & H-21C]. "DC-2 Down Under" 3 pages on correcting the MPM kit to represent an RAAF DC-2 including 14 photos (8 in color) all of the real thing, and a side-view drawing. "A Modeler's Evolution Part Six: 1/72nd `Dazzle' Mustang" 4 pages including 17 photos (12 in color). "Hot off the Workbench" 7 pages of kit reviews (1/72 Special Hobby: Beaufort Mk. I, Bell P-59A/B, Piaggio P.108, & Hawker Sea Fury Mk 11; A-Model 1/72 Polikarpov I-180; CMR 1/72 DFS Kranich glider; Valom 1/72 Firebrand TF MkII; Sword 1/72 General Motors FM-2, CMR Fairy Gannet AS.1 folding wings; and Roo Decals for 1/72 and 1/48 RAAF Bristol Bulldog. "Book Reviews" 2 pages (*Fairey Battle, Piaggio P.108, Spad S.VII, French Aircraft from 1939 to 1942, Israeli Military Vehicles,* and *Les Bombardiers en Pique Lorie-Nieuport*).

SWEDISH AIRFORCE SIG (Harold Rowell, 80 Cambridge Ave., Marton, Middlesbrough, Cleveland, TS7 8EG, England. E-mail: pauline.rowell@ ntlworld.com. Subscription £4.00 UK, £6.00 Europe, £9.00 USA.
#51 2004 (12 pages) "DH Dash 8 Q300 Bombardier" for the Swedish Coast Guard (one page). "Bucker Bu 181 Bestmann (Sk 25)" one-page review of the 1/32-scale Planet kit. "Heinkel S IIa/HE 4 (S 4)" one-page review of the 1/72-scale Kora Models kit. "Save Aeroseum" 4-page report on a tour of a Swedish aeromusem in a SwAF underground facility.

FINLAND

IPMS-MALLARI (IPMS Finland, PL 798, 00101 Helsinki 10; 6 issues $20.00, no check accepted due to the high redemption costs). Now with captions in English.
#157 1/2005 (24 pages) "Polikarpov I-16" 8 pages including 20 photos of exterior details and 4 sketches of construction details. "Royal Air Force Museumiin Hendoniin" 2 pages including 4 photos.

SUOMEN ILMAILUHISTORIALLINEN LEHTI (Pentti Manninen, Jakomaentie 8 b C 300, 00770 Helsinki. Subscription: Europe 26 euro, elsewhere 32 euro or 42 USD. Payment by International Postal Order or in cash notes; no cheques accepted because of high redemption rates).

Each issue includes a 2-page English summary. **1/2005** (24 pages) "Collision at Malmi Airfield on 6 July 1943" one page including one photo of Ju 52 and SB.2 in a close embrace. "Civil Guard Training Course 1924" 7 pages including 4 photos and a scale multi-view drawing of the Caudron C.60. "additional Information about the 1924 Civil Guard Training Course" a 2-page personal account including one photo and a lists of pilots trained and the Caudron C.60 used. "Vought Model V-156 on offer to FinnAF in 1938" 4 pages including one photo, a small 3-view drawing, performance chart, and drawing of equipment layout. "Performance of Piston-Engine Fighters. Part 4" 4 pages including 3 photos, power chart, and multi-view scale drawing for the DB605A-1. "Ferrying of 14 Messerschmitt Bf 109G-2 Fighters from Germany" a 2-page personal; account including one photo. "Second Hand Messerschmitt Bf 109G-2 from Germany in 1943" 3 pages including 2 photos and a list of the 14 aircraft.

2/2005 (24 pages) "The `bone yard' of wartime aircraft at Halli AFB in summer 1948" one page with 2 photos of mostly Hurricanes. "The Klemm L25 owned by Korsimaa & Co," 2 pages including 4 photos. "Avro 504K 1H49/AV-57" 6 pages including 3 photos, a page of sketches from manual, and a page of multi-view scale drawings. "1945: Year `0' for Finnish Aviation" 2 pages including 2 photos. "Performance of Piston-Engine Fighters" 3 pages with 2 photos and 3 graphs. ""Utti Midsummer Fete 1950" 4 pages including 4 photos [Bf 109G in racing colors & Junkers 34 carrying postwar roundels]. "Bu-60; The aircraft that Bombed Itself" 2 pages including 2 photos. "Night Fighter Operations with Soviet Air Force 1941-44" 3 pages including one photos (Pe-2).

FRANCE

AIR MAGAZINE, TMA, 75 rue Claude Decaen, 75012 Paris, France. Six issues a year. 35 euros in France, 41 euros in Europe, and 50 euros for the rest of the world. Payment by Visa, Eurocard, Mastercard. E-mail: airmagazine@wanadoo.fr.

#24 Fevrier/Mars 2005 (64 pages) "Les Avia 122-422 d'acrobatie (2e partie)" 13 pages including 22 b&w photos, 5 color photos (museum aircraft `OK-AVE'), scale 3-view drawing, three color 3-view drawings (side, top, & bottom views of Romania, German, & Bulgarian aircraft), and 7 color side-view drawings [Slovak (5), Romanian (1), and Bulgarian (1)]. "Le fameux Bloch 200 de Sardaigne" 4 pages including 7 photos of crashed aircraft and the funeral procession. "Les Northrop Delta" 32 pages including 43 photos, 4 pages of multi-view scale drawings; seven color 3-view drawings [side, top, & bottom views of TWA `X12292', Swedish `SE-ADI', US Army Corps of Engineers `74', Spanish Republican `EC-AGC' & `TN-001', and Spanish Nationalist `43o4' & `L.12-17'; and 11 color side-view drawings [Aerovias Centrales `X-ABED'; Bendix Trophy Racer `27'; Honeywell `NC13777'; `NC14266' for shipment to Spain; Ellsworth Antarctic Flight `NR14267'; Australian `VH-ADR'; US Coast Guard `382' & `V150'; RAAF `A61-1'; RCAF `667', `676' `MXoC`, & `673'; Spanish Republican `F-AQAQ'; Spanish Nationalist `43o5" & `43o18']. "Le prototype Lloyd G 40.08" 3 pages on Austrian tri-motor triplane bomber including 7 photos and a 1/72-scale 3-view drawing. "Actualite Maquettes & Livres" 4 pages of reviews of kits [14 kits including 1/72-scale Fw-58 Weihe, Goppingen Go 9, & Finnish Fiat G.50 with skis], one conversion set [folding wings for Fairey Gannet], and books.[11 books including "Polskie Skrzydla 1" (Spad 61C, Spad 51C, & Wibault 70C), "Polskie Skrzydla 2" (Caudron CR 714, Morane MS 406, & Bloch MB 151/152), and "Polskie Konstrukcje Lotnicze, Vol. 1" by Glass (enough said).

AVIONS: Toute l'Aeronautique et son Histoire (Lela Presse, 29 rue Paul Bert, 62230 Outreau, France. 50 euro for 6 issues).

#144 Mars/Avril 2005 (72 pages) "Herman Goring" 17 pages including 38 photos, color cover painting, `victory' list, and 8 color side-view drawings [Albatros D.II (2), Fokker Dr.I, Albatros D.V, and Fokker D.VII (4)]. "Le Potez 39" 18 pages including 26 photos of the aircraft, 19 photos of details, a color 3-view drawing (side, top, & bottom views), and 3 pages of multi-view 1/72-scale drawings. "Les Hydravions Short Sunderland su Combat" 10 pages including 9 photos, a color 2-view (top and side views), and 8 color side-view drawings. "Carnets d'Afrique" 8 pages including 9 photos and 6 color side-view drawings (Ju 87D). "Le Sopwith I B2 de Gesnes" 2 pages including 3 photos. "Les Avions Jodel" 8 pages including 20 photos. "Juvisy 1910: le monoplan 1la Fregate'" one page with 2 photos. "Info maquette et loisirs" 3 pages with short reviews (with color illustrations) of kits (8), books (12), and CDs (1).

#145 Mai/Juin 2005 (72 pages) ""Les hydravions Short Sunderland au combat" 13 pages including 15 photos, color cover painting, two color 2-view drawings (top and side), and eight color side-view drawings. "Les as francais 39-45: Jules Joire" 9 pages including 15 photos and 2 color side-view drawings of his H-75A. "Le Potez 39" 13 pages including 24 photos, a 2-page cut-a-way drawing, a two-view drawings (top and side), and 8 color side-view drawings. [Ed: I didn't even know this aircraft existed – now to have this extensive 2-part coverage is mind-boggling. Since Heller seems to have given up doing kits of French a/c, can we hope that Azur will consider doing a kit of the Potez 39? And, while I'm dreaming, will KP ever resume doing kits of Czech a/c?] "1940: Des photos d'avions francais en couleur!" 3 pages with 7 photos. "La chasse terrestre de la Marine imperiale japonaise (5): `Sho Go' [le plan de la derniere chance]" 7 pages including 13 photos and 4 color side-view drawings (Zeros), "Pionniers" one page with one photo (Mars 1922: l'"uniplan" Connel). "L'Arado 196 en 1944-1945 (6^{e} partie)" 7 pages including 10 photos and 4 color side-view drawings. "Info maquettes et loisirs" 3 pages of reviews of books (13), decals (3), & kits (6) all illustrated in color. [Ed: Choroszy has four new interesting 1/72-scale resin kits: Norwegian Hover MF 11 & MF 12, Ikarus SM, & Caproni Ca.164. Interesting books include *Finnish Air Force Post WWII* and *Camouflage and Markings of the Aeronautica Nazionale Republicana*.]

GERMANY

FLIEGER REVUE EXTRA (Verlag Fliegerrevue, Herrn Detlief Billig, Oraniendamm 48, D-13469 Berlin. 4 issues per year, $66 surface. Payment by check drawn on German bank)

[Editor's note: For reasons unexplained, the following issues were received out of sequence. However, because of the coverage of the air arms of the Estonia and Latvia, they are reviewed here. Extra #5 covered the Lithuanian air arms. See the review in SAFO #110. Thanks to the editor of Extra for making it possible for me to review these three important issues.]

#6 (132 pages) ""Der zivile Luftverkehr der DDR Teil 2: Die Turboprop-Ära" 22 pages including 45 photos and 3 color side-view drawings (Baade 152, Il-18, & An-24). "Eesti Õhuvägi – Estlands Luftwaffe" 22 pages on the Estonian air arms from 1919 to the present including 42 photos and 44 color side-view drawings (most with either partial or full top-view drawings [Be2e (2), Sopwith Strutter, Sopwith Camel, DFW C.V, Norman Thompson NT2B, Avro 504K (2), Short 184, Airco DH9 (7), Halberstadt Cl.VI, Nieuport 17, Ago C.V, RE8, PON-1A, PTO-4, PTO-6, PN-3, Halberstadt C.V (2), FBA Typ H, Avro Anson I, Potez 25A.2 (2), Gordou-Leseurre GL-22 (2), Hanriot HD.14, Spad S,VII, Bristol Bulldog II, Armstrong-Whitworth Siskin IIIDC, Avro 626, Hawker Hart (2), An-2 (2), Mil Mi-2, Mil Mi-8T, Let L-410UVP (2)], and a table listing individual aircraft. [Ed: The Estonian national insignia has not changed in over 80 years. I wonder if any other air force can beat this record.] "Luftkrieg im Kaukasus" 26 pages including 44 photos and 15 color side-view drawings [Su-25 (3) Mi-8 (7), & Mi-24 (5)]. "England-Australia: Das längste Luftrennen der Welt" 20 pages including 48 photos (aircraft and participants), table listing aircraft entered, aircraft that started the race, and aircraft that finished the race, and a color 3-view drawing of the winning DeH Comet `G-ACSS'. "Auf Wiedersehewn MiG-29" 22 pages including 51 photos.

#8 (132 pages) "Luftsport in der DDR" 24 pages on gliding in East Germany including many photos and 3 color side-view drawings (Patriot, Baby 2b, & Yak-18). "Latvijas Gaisaspeki" 20 pages on the Latvian air arms including 43 photos, tables of all aircraft from 1919 to the present, and 40 color side-view drawings (most with either partial or full top-view drawings [Ni 24bis (2), Sopwith Strutter (4), Junkers Cl.I, Sopwith Camel, Rumpler C.I, LVG C.VI, Fokker D.VII, Albatros C.III, Svenska Aero S-11a, Albatros B.IIa, Ansaldo SVA-10, DFW C.V, Bristol Bulldog, Gordou-Leseurre B3, Ansaldo A.I Balilla, Gloster Gladiator, Fairey Seal (2), Martinsyde F.4 Buzzard, Fiat CR.1, VEF Irbitis I-19, Ikars I-5 II, VEF Iribis I-12, VEF Irbitis I-15b (2), VEF Irbitis I-12, KOD-2, KOD-1, Schulgleiter SG-38, VEF Irbitis I-16, PZL Swidnik Mi-2U, Mil Mi-8MTW-1, Antonow An-2, Let L-13 Blanik, & Let L-410UVP Turbolet). [Ed: I counted 7 different types of national insignia, so the modeler can build theme collection of Latvian aircraft without duplicating the national insignia.] "Firefighter in Nordamerika" 28 pages with many photos of aircraft. "Mythos Dreidecker" 14 pages including 25 photos and 4 color side-view drawings of the Fokker Dr.I. "Jakowlews Zweistrahler" 24 pages on the Yak-24/28 family including 30 photos, 7 color side-view drawings, 44 side-view drawing(!) showing the many variants, 7 scale drawings of missiles, and 4 scale drawings of bombs.

MITTEILUNGEN (IPMS Germany, Bergengruenstrass 5-7, D-1000 Berlin 38; 12 issues DM 60.00 Europe, DM 65.00 USA, DM 70.00 Japan, DM 75.00 Australia).

1/2005 (44 pages) Nothing of small-air-force interest.`

ITALY

AERO FAN Storia di Italiane. English summary. (Giorgio Apostolo Editore, Via Ampere 49, 20131 Milano, Italy.) 4 issues L 80,000.

#92 Gen-Mar. 2005 (68 pages) "Seize those `Balillas'!" 4 pages on the SVA A1 Balilla on their way to Turkey that were seized by the Greeks including one map, 4 photos of Greek a/c (Breguet 14, DH-9, & Balilla) and 2 color side-view drawings (Balilla & DH-9 both in Greek service). "CANT Z.1014" 6 pages on a never-built very advanced 4-engine bomber including a 3-view drawing and 4 color photos of a model. "The Flying Schools of the ANR" 9 pages including 13 photos (Macchi C.202, Avia FL3, Breda 25, & S.79). "Captain Enzo Revetta" 5 pages including 7 photos (CR.42, C.200,

& Bf 109G). "DC4s and their Derivatives in Italian Airlines" 13 pages including 24 photos (7 in color) and the compete history of all ten DC-4. in Italian service. "The Restoration of the `Jahu'" 6 pages in the ongoing restoration of the Brazilian S.55 in Brazil including 11 color photos of the restoration in progress and one photo of the a/c as seen in 1926.

JP-4 Mensile di Aeronautica (JP-4, Via XX Settembre 60, 50129 Firenze; L 27.000 Europe, L 30.000 elsewhere).

#2 Febbraio 2005 (100 pages) Color photos: Bulgarian Mi-17 `406'. "Incident: Militari" 2 pages including 4 color photos of aircraft involved in accidents (USMC AH-1W, Jordanian F-5, Argentine UH-1H, & Canadian Tutor).

#3 Marzo 2005 (100 pages) Color photos: Israeli CH-53 `717' and Spanish EF-18 `12-20' & AS532 Cougar `402o25'. "Predator Italiani in Iraq" 2 pages including 4 photos. [Ed: Now you can do a model of a Predator in the markings of a small air force.]

#4 Aprile 2005 (100 pages) Color photos: Indian An-32 `K2744'; Iraqi C-130 `YI-301'; Swiss Cessna Citation `T-784'; Hungarian Gripen `30', and Syrian Mi-8. "L'Aeronautica Afgana" one page with 3 photos (An-32, An-26, & Mi-8). "Il GlobalFlyer attorno al mondo" 4 pages including 8 photos. [Ed: How long will we have to wait for a kit of the GlobalFlyer – and SpaceShip One?] "Incident Militari" one page with 3 photos (Chilean MD369 & Taiwanese F-5F).

#5 Maggio 2005 (100 pages) Color photos: RAAF AP-3C; SAAF 707; & Austrian Fiat G-46, "Althea: L'Unione Europea in Bosnia" 4 pages including 7 photos (Italian AB205, Spanish AS532 Cougar, Belgium A109, & Romanian IAR 330 all in EUFOR markings]. "Mare Aperto e Noble Marlin" 3 pages including 8 photos (Italian Harriers, Seaking, & Alantic)."Incidenti: Militari" one page including 2 photos.

#6 Giugno 2005 (100 pages) Color photos: Belgian C-130H, Chilean F-16, Monaco (Monegasque) Fennec, and Czech Grippen & Hind. "I CL-415 italiani nello Sri Lanka" 6 pages including 20 photos. "1° Raduno Aerodina Club" 2 pages with 8 photos (Ca-100, CASA 1131, Stinson L-5, Piper L-4 & L-21, Alouette II, Druine 5, and F8 Falco). "Incienti: Miliotari" 1 ½ pages including 6 photos (Saudi C-130, Indian HPT-32, Romanian MiG-21, Peruvian Let 410, and USN T-45 & F/A-18).

NETHERLANDS

MODELBOUW IN PLASTIC (IPMS-Nederland, c/o Rene Euhart, Bernadottestraat 133, NL-2131 SP Hoofddorp,; erhart@quicknet.nl).

1/2005 (34 pages) "De Lockheed RT-33A" 7 pages including 7 photos of Dutch RT-33 and 7 photos of completed models, top- and side-view drawings of `PT-19' in natural metal finish, and a color three-view drawing (port, starboard, & top) of camouflaged `M-103'. "Matchbox Mystere IV" 4 pages including 12 photos of the completed model in Israeli markings. "Ervaringen van een `beginner'" 6 pages including 4 photos of completed models. "Vliegtuigmusea down under" 2 pages including 7 photos of RNZAF museum aircraft. "Curtiss SC-1 Seahawk: De laatste der Mohikanes" 5 pages on building the 1/48-scale resin kit including 9 photos of the model under construction.

SPAIN

REVISTA ESPANOLA DE HISTORIA MILITAR (Carlos Fresno Crespo, Alcaniz Fresno's S.A., C/Cromo 18-20, Poligono Industrial San Cristobal, 47012 Valladolid) €6.90.

#57 Marzo 2005 (58 pages) "Los cazas Fiat CR-32 en la Union Sovietica" 8 pages including 12 photos and 2 color side-view drawings (Spanish Nationalist and Soviet). "El armammento de loss destrictores tipo Churruca en las Guerra Civil" 10 pages on Spanish destroyers including 15 photos, 2 color drawings of Vickerss guns, and 2 color side-view drawings of Spanish destroyers).

Poster inserts; "Tractor Landesa", "Tractor Prugeot T 3", "Tractor Semioruga Citroen-Kegresse K-1", and Chenillette M-21".

Book insert: "Carros de Combate y vehiculos de cadenzas del Ejercito Esspanol. Un siglo de historia: Guerra Civil (1936-1939)" (page 129-144) "Trubia/Naval" (continued) 3 pages including 4 photos. "Tractor Lansesa/Naval" 5 pages including 10 photos and a color side-view drawing. "Blindados Sadurni" 7 pages including 13 photos and 3 color side-view drawings.

Book inset: "Operaciones acorazadas de la Segunda Mundial" (pages 21-36) "De Sedan A Abbeville" 6 photos, 2 maps, 10 color side-view drawings of German tanks and other vehicles, and a 2-page color drawing of a German tank.

#58 April 2005 (58 pages) "Char 2C: El carro de los excessos" 6 pages including 7 photos and a color side-view drawing. "Division Hermann Goring (3ª Parte)" 15 pages including 28 photos and 4 color side-view drawings. "Ataques a las bases del Mar Menor" 13 pages including 11 photos and 5 color side-view drawings [SM.81 (1), He 59 (1), & SM.79 (3)].

Poster inserts: "Carro de combate BT-5", "Pegaso 3045D con lanzador L-32 RS B2", "Canon antiaereo de 76.2/34 Vickers Mod. FF", and "Canon antiaereo de 76.2/45 Vickers Mod. SS".

Book insert: "Carros de Combate y vehiculos de cadenzas del Ejercito Esspanol. Un siglo de historia: Guerra Civil (1936-1939)" (page 145-160) "Carros de combate artesanales cando nacional" 2 pages including 4 photos and a color side-view drawing. "Carros de combate e infanteris C.C.I.Tipo 1937" 5 pages including 6 photos and one color side-view drawing. "Tractor pesado S.E.C.N." including 3 photos and one color side-view drawing. " "Carros verdeja (Prototipo)" 3 pages including 4 photos and one color side-view drawing. "Carro Renault FT.17" 5 pages including 11 photos.

Book inset: "Operaciones acorazadas de la Segunda Mundial" (pages 37-52) "Montcornet, 17 de Mayo de 1940" 12 photos, 2 maps, a 2-page color 4-view drawing [Somua S 35], and 9 color side-view drawings [FMC 36 (1), Renault R 35 (1), Larraine 1939 (1), Somus S.35 (1), 88 mm (1), Hotchkiss H 39 (1), & B1 bis (3)].

#59 Mayo 2005 (58 pages) "Panzerkampfwagen I" 17 pages including 17 photos, a 2-page color 4-view drawing, and 15 color side-view drawings of many variations on the same chassis. "Blitzkrieg en el Desierto, 1967: Operation `Focus'" 12 pages including 13 photos and 21 color side-view drawings [Israeli Spitfire, Mustang, Meteor, Texan, Ouragan (2), Mystere IVA, Super Mystere (2), Mirage IIICJ (2), Dakota, Vautour, & Do 27; Egyptian Spitfire, MiG-21F-13, & HA-200B; Syrian MiG-15 & MiG-21PF Iraqi Hunter; and Jordanian Hunter].

Book insert: "Carros de Combate y vehiculos de cadenzas del Ejercito Esspanol. Un siglo de historia: Guerra Civil (1936-1939)" (page 161-176) "Carro Renault FT.17" (continued) 6 pages including 8 photos, a 2-page color 4-view drawing, and 2 color side-view drawings. "Carro veloce CV.33/35" 10 pages including 14 photos, a 2-page color 4-view drawing, and one color side-view drawing.

Book inset: "Operaciones acorazadas de la Segunda Mundial" (pages 53-68) "El contraataque de Arras" 16 photos, 2 maps, a 2-page color 4-view drawing [Matilda Mk II], and 7 color side-view drawings [Vickers Mk IV, A-13, Panzer IV Ausf D, Vickers VIC, 3.7 cm antitank gun, Matilda Mk I, & Bren Carrier].

Poster inserts: BMR-600 Vehiculo de Combate de Zapadored (V.C.Z.); BMR-600 de Preserie (Torre Toucan de 20 mm.); BMR-600 Torre TC-3; and BMR-600 Grupo "Roland".

USA

WWI AERO (15 Crescent Rd., Poughkeepsie, NY 12601; 4 issues $42.00 USA or $47.00 overseas).

#188 May 2005 (146 pages) "Santos-Dumont and the De Dion Engine" 8 pages including 2 photos and several sketches. "Building and Flying a Bleriot XI" 7 pages including 11 photos. "Cicero Flying Field (Part 3)" 16 pages including 12 photos. The Gallaudet Story:Part 10 - Scout Hydros for the US Navy" 6 pages including 3-view scale drawings of two never-built single-seat float planes with the Gallauset center-mounted propeller. "Fokker – The Early Years: Part 1" 9 pages correcting misconception about the career of Tony Fokker; includes 7 photos (Spin, M3, & M.4). History of Rumpler C.IV 1463/17" 9 pages on a ripping good detective story of the search for the history of a few fragments of a WWI aircraft found in a Brussels' garage; includes 11 photos. "Aircraft" 4 pages with 12 photos. "Film" a 3–page commentary of the recent film `Aviator' and the Nova program an attempt to repeat Berliot's channel crossing. "Museums/Organizations" 9 pages including 25 photos. "Engines" 5 pages. "Drawings" 10 pages. "Models" 7 pages including 43 photos. "Publications" 9 pages. "Robert Loraine: Actor/Pilot/Actor" 4 pages. "Letter" 6 pages. "Wants & Disposals" 4 pages.

SKYWAYS (15 Crescent Rd., Poughkeepsie, NY 12601; 4 issues $42.00 USA or $47.00 overseas.).

#74 Apr. 2005 (84 pages) "Short-Mayo Composite" 10 pages including 7 photos, scale 3-view drawings, and a cut-a-way drawing. "The Hess Brothers and the Alliance Argo" 10 pages including 9 photos, a 2-page 5-view scale drawing, and history of all 22 Argos. "Design and Construction of the Navy Curtiss NC Flying Boats: Part 2" 9-page reprint of an 1919 report including 8 photos and a scale 3-view drawing of the NC-4. "Airship Model Collection" 10 pages including 31 photos of the models under construction and completed. "Cockpits: Junkers G 38 Transport" 4 pages including 5 photos. "Aviation Movie Publicity Stills" 3 pages with 6 photos. "The US Air Force Museum" 4 pages with 11 photos. "ID UNK" 3 pages with 6 aircraft identified and 3 to be identified. "A Longwing Eaglerock" one pages including 2 photos. "From the Members" 3 pages including 3 photos [Bellanca T14-14 and Curtiss XP-31 (2)]. "Models" 3 pages including 4 photos. "Skyways Reviews" 2 pages with reviews of 6 books and 6 magazines.

ESM 72 (Model-Aire International, 38 Prince Royal Passage, Corte Madera, CA 94925. E-mail: maiesm72@aol.com. Web site: members.aol/Maiesm721/maiwebpg.html.)

Quarterly. $25.00 for four-issue volume. $30.00 outside the USA. Back issues available at same price per volume.

Vol. 8, No. 2 (pages 53-116) "Aircraft by Kit Manufacturer: LB Models to MZMPI" 35pages. "Updates" 26 pages.

Vol. 8, No. 3 (pages 117-172) "Aircraft by Kit Manufacturer: NK to Puky" 26 pages. "Updates" 25 pages.

Mexico's Talleres Nacionales de Construcciones Aeronauticas

Mexico's National Aeronautical Workshops

Santiago A. Flores

Introduction

It would be a surprise to most aviation historians and enthusiast to know that during the time period of between 1915 to the mid-1930's, the Republic of Mexico was assembling, modifying, repairing and even designing aircraft to meet Mexico's needs. These activities where being carried out at an established workshop near the flying field outside of Mexico City.

In these workshops aircraft were designed and built as well as engines and propellers. Some of the aircraft they produced were exported to El Salvador, Guatemala, Costa Rica, and Mexican-built propellers were exported to Argentina and Japan. An attempt was made to export Mexican-made aircraft to Argentina and Chile under the title of the "Compania Industrial Mexicana de Aviacion" (The Mexican Industrial Aviation Company) in 1918. Biplanes and parasol-wing type aircraft were offered, but with no success probably because the end of the World War I allowed surplus allied aircraft to be sold to Latin America.

The need for Mexico to build its own aircraft came about because Mexico was cut off from the main aeronautical supplies from Europe during World War I. Later on, after the end of that conflict, Mexico would be able to obtain engines from Spain and aircraft from France (Farman F-50 bombers) and Italy (Ansaldo fighters and two-seat aircraft). It was difficult to obtain aircraft and supplies from the USA after 1915 since relations between the two nations were strained and sometimes even hostile. This was caused by incidents related to the Mexican Revolution, which caused the northern neighbor to be concerned with the security of its borders. The US intervention in Vera Cruz, in 1914, and the Mexican Punitive Expedition of 1916 going after General Francisco Villa did not help matters.

Aircraft in Mexico before 1915, including those purchased by the Madero Government of 1912 and by the different revolutionary factions, was mainly flown by American mercenaries. These aircraft were concentrated in Mexico City following the triumph of the Constitucionalista faction led by the former Governor of Coahuila, Don Venustiano Carranza (1859-1920).

A source of spare parts was needed to maintain the aircraft of the 1er.Flotilla Aerea Constitucionalista (1st Constitutional Air Fleet). This unit was under the command of then Major Alberto Salinas Carranza (1892-1970), a nephew of President Carranza, who helped to create today's Mexican Air Force. He had under his charge two of three Kanter Moisant monoplanes flown by Americans and even a Rumanian pilot with a number of Mexican Nationals acting as observers. This officer, with the support of his uncle, would, on November 15, 1915, establish the Talleres Nacionales de Construcciones Aeronauticas TNCA (The National Aeronautical Construction Workshops) that would provide support to the Escuela Nacional de Aviacion (National Aviation School) established at the same time in the fields of Balbuena outside of them Mexico City. [It was at these same fields that Sr. Alberto Braniff (1884-1966) became the first Mexican to fly in his Voisin pusher biplane on January 8th 1910.] This aviation force consisted of the following aircraft:

- One monoplane Bleriot, Anzani engine. The instructor Jorge Pufflea used this aircraft to give the first flight lessons.
- One biplane of 100 hp, Newport. This was the Huntington-Newport Biplane purchased in the USA by Salinas and the American pilot Leonard Bonney. 1915.
- One Morane monoplane. One of the three Kanter-Moisant monoplanes used by the 1/o Flotilla Aerea. (1)
- One aircraft being built. One of the surviving Kanter-Moisant monoplane being converted to a biplane the first of the Serie A Biplanes, reportedly given later to El Salvador in 1917.

Note: (1) One of the Kanter-Moisant monoplanes was lost in a forced landing between enemy lines at Tampico in May 1915. The Constitucionalistas recovered some parts, including the engine. The American Leonard Bonney who made it back to the Constitucionalista lines flew the aircraft.

As for the organization of the TNCA the workshops fell under the Department of Aviation, (Departamento de Aviacion) under the leadership of Mayor P.A. Alberto Salinas Carranza:

TNCA Workshops: Chief of the workshops: Francisco Santarini (Frank). Sub-chief the workshops: Adolfo Vazquez, Chief of the Technical Section: Juan Guillermo Villasana.

Administration Section: Sub-chief of the workshops and aviation school: Bernardo F. Cantolla, Chief of the Admin. Section: Pedro Sousa, 5 office clerks, and one warehouse clerk.

Motors and Aircraft Maintenance:Mechanics Adolfo Lopez, Agustin Enriquez, and Enrique Pizana. Helper: Agustin Oviedo and Santiago Vazquez. Mounter: Medardo Cordova Torres. Carpenter: Francisco Rosas.

Mechanical Workshop: Aircraft mechanics: Alfonso Gonzalez, Tomas Larin, Augusto Gagniere Lang. Helper: Jose Sanchez Saldana. Adjuster: Apolinar Pasaran. Welder: Juan Fuentes and Francisco Guagnelli. Modeler: Adolfo Vazquez.

Carpentry: Carpenters: Feliciano Reynoso, Jose Martinez, Jose G. Verdiguel, Jose Vazquez, Feliciano Flores. Vestidor: Enrique Martinez.

Propellers: Propellers: Jesus Lemus and Mariano Romo. Bank mechanics: Ricardo Vazquez and Lorenzo Rochas. Helper: Alfonso Villagran.

Garage (Automobiles): Auto mechanics: Angel Santana and Roman Santana. Drivers: Carlos Santana, Jose Garcia, Pedro Rico, and Manuel Dellamari.

Test Pilot: Leonard Bonney (American).

Instructor Pilot: Jorge Puflea (Rumanian)

Cadets: 23 Personnel (Mexican)

In one move, Mexico was able to repair its own aircraft and train its own pilots, first with the American instructors, but later with their own people. After an incident between the two above-mentioned pilots and the "Maestro" Santarini, both pilots were removed from the Air Service.

Later, all remaining aircraft from the different revolutionary factions were sent to Mexico City for repair, transformation, or as a source of spare parts for other aircraft. These aircraft were:

- Three Wright-type biplanes captured from the Villistas
- One "Main" captured from the Villistas. (1)
- One Christopherson Biplane from the Division of Gral. Plutarco E. Calles. (2)

Notes:

(1) This was probably parts of the Martin TT type biplane used by the forces of General Francisco Pancho Villa.

(2) This was the Chirstopherson Pusher Type aircraft used by General Calles in the northern part of Mexico (in the state of Sonora) and flown by the American pilot Lawrence W. Brown who did reconnaissance and some bombing mission against the rebel Villista forces and Indian Yaquis as well.

There were in Mayor Salinas's staff two collaborators who would be of great help in the establishment of the workshops. One was the Italian Francisco Santarini Tognolli (1882-1958) who had meet Major Salinas when the later was a student at the Moisant Aviation School. He was also well known as the builder of the power-plant that Louis Bleriot used in his crossing of the English Channel. The "Maestro" (Professor) as he was known in Mexico, joined Salinas in Mexico as chief mechanic. He would later design and built

aircraft and engines, organize the shops, and he even taught cadets how to fly, even though he was never a pilot! After Bonney and Puflea were fired. Another helper was Ing. Juan Gullermo Villasana (1891-1959), an early Mexican aviation pioneer who had already built one of the first aircraft in Mexico and had done some repair work on the aircraft of the Moisant International Flyers. He would also design aircraft and the propeller "Anahuac" that would be used in most of the aircraft built in the early days of the TNCA.

For the purpose of this article, we will present a listing by type of the aircraft that the TNCA built or assembled through the years, including imported types such as the Custiss Jenny, Farman F-50, Ansaldo, Morane-Saulnier, and so on. Also included is a list of aircraft exported or given as gifts to several Central American countries.

The Listing

It should be noted that these listings are not 100% accurate, since there are some discrepancies regarding the actual number of aircraft built and the serial number assigned. In some cases, the numbers are repeated, and in some cases the number given to an aircraft does not match the list from different sources, as in the case of the first 15 aircraft built or assembled at the TNCA. In some instances, the type designation was changed. Some times, aircraft built or assembled at the TNCA did not receive any TNCA serial number, possibly because they were private owned or maybe a one of-a kind projects.

There is also some confusion as to the actual number of Bleriot monoplanes built: Some of them were built to be employed in the training of the cadets at the Aviation School and some were for the cadets to learn how to handle the machines in a series of ground runs across the field, without actually taking off, a common training exercises of those days. The other Bleriots built were those for short hops into the air, some possibly coming from those left by the Madero government and others that had been seized from their private owners by Dictator General Victoriano Huerta when he formed his air service for the Mexican Federal Army.

Another area that needs to be looked at is the actual number of Avro "Anahuac" trainers built in the 1920's. This was a Mexican version of the famous Avro 504 trainer, which was given the TNCA designation letter "A". The first seven or eight were brought from England (some sources report that others came from Canada): a total of over 40 Avro trainers were built. It's hard to determined which ones were the original British planes and which where the Mexican-built. Some of these trainers were used in the training of new pilots, but they were also deployed to operational squadrons or "Escuadrillas" flying recon and actual bombing missions against rebel factions through the 1920's. After they were retired from the service, they were passed down to civilian pilots and private flying schools around the country.

As for the numbering system that the TNCA used for its aircraft, it adopted quite an interesting numbering system that is explained by the following example:

TNCA Biplane Serie A # 6A19. It was the 6th aircraft of the type Serie A built and the 19th aircraft built or assembled at the TNCA. The letter "A" identified it for school use. However, in many cases these training planes were used to bomb rebels in the northern part of the country during 1919. During this campaign, the Serie H Parasols were also employed in the role and one had a Danish machine gun mounted with on the side of the cockpit to fire downward.

Before this system was used, the TNCA had use another numbering system that was applied to the early aircraft assigned to the aviation school:

- Monoplane 1-1-1: A Kanter-Moisant monoplane converted to a biplane
- Monoplane 2-1-2: A Kanter-Moisant monoplane withdrawn from service.
- Monoplane 3-1-3: A Kanter-Moisant monoplane lost at Tampico in May 1915. Certain parts and the engine were recovered for use as spare parts.
- Parasol 4-1-4: Parasol No.4 with a Gnome 80 hp engine, Sept.1916. Remove from service August 1917.

This information comes from a report dated 7 May 1919, that had list of inventory of all the aircraft built at the TNCA up to that time base on the book by Ing. Lascurain y Osio around 1925. However, in the manuscript written about Francisco Santarini by Medardo Cordoba he list the first three aircraft the other way:

- Moisant 1-1-1: Lost at Tampico at the end of April/May 1915. The pilot was Jorge Pufflea. The engine and parts were saved, but the fuselage was burned.
- Moisant 2-1-2: In service December 1915, before accident 12 October 1915. The pilot was Capt. 2/o. Jorge Fabris.
- Moisant 3-1-3: Transformed into a biplane, which started at Merida, Yucatan, in the railroad workshops in March 1915.

In the end one Kanter-Moisant monoplane survived until the mid 1920;s engine less and hanging in one of the hangars of the TNCA. Its ultimate fate has not been documented.

By December 1916, the Aviation School had the following aircraft serving in its flight:

- Kanter-Moisant Monoplane No.2: Gnome engine 80 hp.
- Huntington Biplane: Gnome Engine 100 hp.
- Bleriot Type monoplane: Anzani engine 60 hp
- "Latino Americano" type monoplane: Gnome engine 50 hp
- "El Guajalote" Taxi monoplane: Ford engine (1)
- Taxi monoplane: Radial engine 35 hp
- Parasol Type monoplane Serie H No.4: Gnome engine
- Biplane Type transport Serie B No.1: Curtiss engine 75 hp "El Elefante"
- Being built: 3 Bleriot type monoplanes
- 1 Biplane Serie A with a Gnome 80 hp engine.

Note: This training aircraft was built from the parts of the crashed Martin Biplane " Sonora" that was assigned to the Division of General Alvaro Obregon and participated in the first known naval aerial combat in 1914 flown by the French American Diddeir Mason and later Guastavo Salinas Camina.

The production rate of the TNCA was not as fast as shown in the following table that is taken from the book: "Historia de la Iniciacion de la Fuerza Aerea Mexicana" written by Medardo Cordova Torres, who served as a mechanics during that time period.

Table #1
Aircraft Built by the TNCA by the End of 1917

Serie	Type	Application		# Built
A	Biplane	Trainer	Paloma	13
B	Biplane	Transport	Elefante	1
C	Biplane	Fighter	Microbio	1
D	Monoplano	Trainer	Biriol	3
E	Monoplano	Trainer	Guajolote	2
H	Monoplane	Observation	Parasol	1

Note: Serie F and G were under construction by their designer, Juan Guillermo Villasana, in Building No.1 of the workshops. Grand total of aircraft built by

the end of 1917 was 21 aircraft. The following are translations for the names given to the TNCA aircraft: Paloma (Dove); Elefante (Elephant); Biriol (?); Guajolote (Turkey); Microbio (Microbe); Parasol (Parasol)

A report dated May 7, 1919, during an inspection to the workshops and school shows the following number of aircraft available:

- 13 aircraft in the field
- 10 aircraft under repair (7 in the workshops and 3 in the field squadrons)
- 30 aircraft written off or dropped from the inventory, due to accidents, wear and tear or transformed or given to another country.

As for the productivity of the TNCA for that same year, an American Intelligence report, dated August 2, 1919, provides the following information: "At Present they are turning out three complete machines per month, using a personnel of some 200, consisting of the employees, laborers, peons etc. It is concluded that there must be 35 apparati (Aeroplanes) in service, which together with these in the school (4) and in the shops (3), form a total of 42 machines in use. The majority are in Chihuahua for, in Sonora there are 3,in Fortin 5, and in the neighborhood of Tampico there are 4, which should be added to the 3 existing in Chihuahua."

As for the mechanical shops, the same report gives the following information: "In the shops they completed the `Aztalt' motors, at the present 3 being built per month (80 hp)- they haven t exceeded 150 hp.

"September 3, 1918, a press report stated that they were 172 Aztalt motors ready at the shops and any number of propellers. A private letter of the same date (intercepted) stated there were 172 Aztalt motors on hand and 60 airplanes in service.

Powerplants and Propellers

Juan Guillermo Villasana's "Anahuac" propeller was designed to meet the requirements for flying at high altitudes. This propeller could also be used at sea level as when flying in the Port of Veracruz. Villasana had designed this propeller before the formation of the TNCA. After its formation, he was invited to join by Major Alberto Salinas. The first "Anahuac" was installed in one of the surviving Kanter-Moisant monoplanes and flown on October 12, 1915. A second one was installed and flown on the Huntington biplane on November 16, 1915, in which the American pilot Leonard Bonney flew to 5,260 meters above sea level.

The "Anahuac" propeller was produce to handle different types of engines from the Gnome to the Hispano Suiza 150 hp and equipped most of the aircraft that the TNCA built or modified. During this time at the TNCA Ing. Villasana (later director of the Aviation School) designed and built two monoplane-type Deperdussins named the "Latino America", one for exploration work and the other for combat. As for the power plants "Maestro Santarini" designed and built a number of them, among them the "Aztalt" engine, a six cylinder radial with a 80 hp for use in the Serie A and Serie H Parasol aircraft. He designed another called the "Trebol" (Clover Leaf), a 3 cylinder, 35-40 hp, which was used on training aircraft that ran only on the ground like the Bleriot monoplanes.

A third engine designed and built by Santarini was the S.S. Mexico, a 10-cylinder radial engine with 130 hp. This engine was successfully tested on May 28, 1918, on Serie A biplane 26A41. But the only news we have of this engine was that 3 were under construction at shops around June 1918. It could be possible that the production of the S.S. Mexico (Salinas, Santarini, Mexico) was discontinued due to the acquisition of the Hispano Suiza Engines of 150 h.p. And later the French-built Salmon radial engines used in the new Serie B aircraft designed with an improved fuselages.

The Demise

The mid 1920's marked the arrival of American-made aircraft after the fall of the Carina government in May of 1920, and the arrival of the Mexican-born USAAS fighter pilot Ralph O'Neill, a World War I veteran combat pilot. Before this happen, Col. Salinas and Sintering went to Europe and brought back aircraft and engines that they hoped to produce in Mexico (Salmon engines, Italian Analog aircraft and French Forman F-50 bombers etc.).

It was Col. Assam. O'Neill who brought changes to the air service and training methods that made it possible to buy the Afro 504K biplane trainers and introduce the proper training system, and retrain the old veteran pilots.

It was during the De La Huestista Rebellion, 1923-1924, and under the suggestion of Col. O'Neill that American-made combat aircraft were bought. Some of these where assembled at the workshops, but they did not receive TNCA serial numbers; for example, De Havilland DH-4b, Douglas O-2C/M, and later the British-made F2B and other types like the Lincoln Standard J-1 biplanes. These aircraft received the individual numbers of No.1 to N.6, some Mexican-built aircraft were still being built before 1924 by Ing. Angel Lascurain y Osio which consisted in series of "Parasol" types aircraft among them a fighter type, a trainer and some two seaters which received TNCA serial numbers, a concept he had picked up during a trip to France.

It has been alleged that Col. O'Neill led a faction of pilots that were opposed to the building of Mexican-built aircraft like being built and experimented by Ing. Lascurain y Osio, the "Quetzalcoalt" series of aircraft. After one was lost in an accident, O'Neill used the occasion to question the aircraft design safety. Even after the accident review board prove that the accident was due to a bomb that went off prematurely, he already had caused enough doubt among the Mexican pilots about flying the Totoloche series of aircraft, even after Lascurain had converted one from a parasol type to a biplane type.

Later Ing. Antonio Sea designed and built other aircraft, mostly one of a kind, which did not receive any TNCA numbers. Ing. Juan Guillermo Villasana built some other aircraft and even a primitive helicopter around 1922.

During the 1920 s a small number of aircraft built or assembled at the TNCA were presented as gifts to other countries in Central America. These included some Avro "Anahuac" for Guatemala and Panama and a Lincoln Standard J-1 for El Salvador. The latter country also probably received two Serie A Biplanes in 1917.

In the later years, the title of the workshops would suffer some changes: around 1941-1942, when 10 Barrera Ares EP primary biplane trainers were built for the Aviation School, three titles were mentioned in one article alone: "Talleres de Construcciones Aeronauticas" (TCA) Aeronautical Construction Workshops; "Talleres de Construcciones Aeronauticas Militares" (TCAM) Military Aeronautical Construccion Workshops; and "Talleres Nacionales de Reparaciones Aeronauticas" (TNRA) National Aeronautical Repair Workshops.

Nowadays the major repair work and maintenance of the former TNCA is carried out by the 4/o Escalons de Mantenimiento (4th Maintenance Echelon) of the present Mexican Air Force.

Table #2
Aircraft Built at the TNCA 1915-1920

Serie	Type	Application		Quantity	
A	Biplane	Trainer	46		
B	Biplane	Transport	1		
B	Biplane	Trainer	1		
B	Biplane	Obs/Attack		6	(1)
C	Biplane	Fighter	1		
D	Monoplane	Trainer		3	(2)
E	Monoplane	Trainer		4	(3)
E	Monoplane	Obs/Attack/Fighter		7	(4)
E	Monoplane	Trainer.Ground Runs		2	
E	Biplane	Caudron Type Trainer	1		
E	Monoplane	Latino America		1	(5)
F	Monoplane	Latino America		1	(6)
G	Biplane		1		
H	Parasol	Trainer/Obs		15	
J			1		
Total number of aircraft built			83		

Notes:
(1) five aircraft were designed by Ing.Lascurain Y Osio.
(2) Bleriot type monoplanes maybe the original confiscated by the Huerta Government.
(3) Bleriot types,there is some confusion as to the series type assigned to these aircraft. Some were built to run on the ground while others were used in actual training flights.
(4) Different type of aircraft designed by Ing.Lascurain y Osio.
(5) Reported to be an observation type aircraft Deperdussin type.
(6) Reported to be a combat type aircraft Deperdussin type.

Table #3
Mystery Aircraft Built at TNCA

- TNCA 80-A-P (sic): Arrived 3 November 1919 to Station Esmeralda.
- Monoplano "Gato": Flown 4 November 1919 by Pilot Cmdte. Carlos Santa-Ana; possibly TNCA 80-A-P (sic). 3/o Escuadrilla 7 Nov.1919.
- 1-J-40: Unknown type was it built?
- 5-E-60: Monoplane or Biplane reported to be a Caudron type dual control with a Renault 100 hp engine. No more information is known about this trainer.
- Biplane "Chihuahua": No serial number; built around 1923. Aircraft "Chupicuano": Designed by Villasana around 1927.

Table #4
Aircraft Assembled at TNCA that Received TNCA Serial Numbers

Type	TNCA Series	Numbers		
Sopwith 1-1/2 Strutter	Serie S	1		
Farman F-50	Serie F and B		13	(1)
Curtiss Jenny	Serie C	2		
Ansaldo Balilla A-1	Serie D	1		
Ansaldo A.300/SVA.5	Serie D		1	
Junkers-Larsen JL-6	Serie E	2		
Avro 504/Anahuac	Serie A	44	(2)	
Morane-Saulnier MS 35C	Serie A		6	
Brown Special	Serie A	2		
Huntington-Newport	Serie F	1		
Kanter-Moisant	Serie A	2	(3)	
Curtiss HS-2L	Serie ?	1		

Notes:
(1) This aircraft received during its service two-letter designation.
(2) Its hard to determined the exact number of British built Avro 504 trainers bought and those that were later built in Mexico.
(3) One of the aircraft was converted to a biplane know as the Serie A.

Table #5
Aircraft and Propellers Exported by TNCA

Propellers "Anahuac"
Argentina: Between 3-6 propellers? To the Militar de Aviacion El Palomar, Argentina between 1918-1919. One historian puts numbers to 6 propellers sent, while another says 3 were delivered.

Japan: Between 1-8 propellers between 1918-1919. Sources disagree on the number of propellers sent to Japan.

TNCA Serie A Biplanes
El Salvador: 2 Serie A Biplanes. The first one was reported handed over on 23 February 1917. The = aircraft was equipped with Gnome 50 hp. No date when the second one was delivered. A report dated in 1919 lists the following sent to El Salvador: 2-A-13 and 2-A-14 (sic).

Lincoln Standard J-1 Biplane
El Salvador: Two Standard J-1 Biplanes. One, reported to be S-1 was flown by Salvadoran pilot Capt. 1/o Humberto Aberli on 16 December 1923 from Tapachula, Chiapas, to Salvador with a flying time of 4 hours and 25 minutes. S-2, possibly from Mexico, seen May 1924.

Avro 504/Avro Anahuac
Guatemala: One Avro Anahuac "Benito Juarez" was Delivered on 15 June 1927. One Avro Anahuac did not arrived due to accident en route to Guatemala. No date given or known. Costa Rica: One Avro Anahuac "Juan Santamaria" was livered 4 August 1929.

Table #6

Serie A Biplane Trainer

Type of Aircraft	Mexican Two-Seater Biplane
Name of Aircraft	No. Serie A
Purpose	General Purpose
Span	10.15 m
Total Wing Area	35.2 m^2
Engine Type and hp	"Aztalt" 6-cyl. Radial 80 hp
Wing Loading	18.76 kg/m^2
Power Loading	8.2 kg/hp
Tank Capacity	40 liters petrol: 20 liters oil.
Performance	
Speed at sea level	90 km/hr
Disposable load apart from fuel	140 kg
Total weight loaded	520 kg

Serie H Parasol

Type of Machine	Mexican Parasol aircraft
Name of Type	Parasol
Purpose which Intended	General Purpose
Span	10 m
Total Wing Area	17 m^2
Width of Wing	1.90 m
Overall Length	7.60 m
Speed	85-90 km/hr
Engine Power	35-40 hp
Net Weight	380 kg

Serie C Biplane Fighter

Type of Machine	Mexican Scout Plane
Name of Type	Microplano Veloz
Purpose	Single seater fighter
Span, Upper Wing	8.00 m
Span, Lower Wing	6.88 m
Surface Area	18 m^2
Interplane Gap	1.5 m
Overall Length	6.60 m
Maximum Height	2.55 m
Speed Horizontal	190-220 km/hr
Area of Elevators	1.73 m^2
Area of Rudder	076 m^2
Gross Weight	650 kg
Net Weight	460 kg
Useful Load	190 kg
Engine	Hispano-Suiza 150-160 hp
Propeller	Anahuac (Mexican Built)

TNCA 3-E-130 Fighter

Type of Machine	Mexican Scout Plane
Name of Type	Totoloche 3-E-130
Wing Area 16 m^2	
Weight Light	670 kg
Weight Loaded	860 kg
Useful Load	98 kg
Weight of Fuel	92 kg
Maximum Speed	225 km/hr
Minimum Speed	76 km/hr
Climb to 1,000 m	2 minutes, 36 seconds
Ceiling	6,000 m
Endurance	1.5 hours
Airfoil Section	Prandlt 430
Engine	Mono-Gnome 160 hp

Armament	2 Vickers machine-guns

TNCA 4-E-131 "Quetzalcoalt"

Type of Machine	Mexican two seater light bomber reconnaissance machine.
Name or Type	Quetzalcoalt 4-E-131
Wing Area	33 m^2
Weight Light	1,130 kg
Weight Loaded	1,750 kg
Useful Load	390 kg
Weight of Fuel	230 kg
Maximum Speed	200 km/hr
Minimum Speed	75 km/hr
Climb to 1,000 m	4 minutes
Ceiling	6,500 m
Endurance	5 hours
Airfoil Section	Prandlt 413
Armament	Projected to carry 250 kg of bombs, one Vickers machine gun firing forward and a twin Lewis gun mounting on a scarf ring over the observers seat

Table #7
Aircraft Built or Assembled at TNCA

Biplano Militar Tandem No.1, the prototype of the Serie A Biplane. Rreported to be 1A9. Aircraft sent as a gift to El Salvador circa 1916.

Monoplano explorador No.2 (Moisant Military Tandem Monoplane) with Gnome 80 hp. Later numbered TNCA 2-1-1 circa 1916. Repaired at the TNCA after the campaign of 1915. In service December of that year.

Biplano Militar No.3 (Huntington Newport Tractor Biplane with Gnome 100 hp. First flight 16 Nov. 1915. Later TNCA serial number 1-F-6.

Parasol No.4 with Gnome 80 hp. 1916 old serial number 4-1-4. Withdrawn from service August 1917.

1-A-4

Biplane Serie A in service 22 Feb.1916 with an Italian Anzani of 80 hp.

1-E-5

Bleriot monoplane (Nov.1915) "Biriol" for the practice of pilots and cadets. Repaired 15 November 1915. Acquired from the previous government. Aircraft destroyed during training flight per Report dated 7 May 1919.

1-F-6

Huntington Tractor Biplane (January 1916) withdrawn from service per 7 May 1919 report.

1-B-7

Biplano Militar No.7 of the Serie B with 100 hp engine September 1916. Know as the Elephant. Later 1-B-7 or 1-G-7 with Curtiss engine 75 hp, 17 March 1917. Later with Hispano Suiza engine 16 October 1917. Aircraft damaged by strong winds at Leon Atlixco, Puebla, 6 July 1918 (?). Withdrawn from service by May 7, 1919 report.

Aircraft school type with Ford Engine named the "Guajalote" (Turkey) constructed and put in service January 1, 1916 reported as Serie G 1-G-16 August 1916, aircraft know damaged 14 July 1917 and 25 September 1917.

Bleriot type monoplane "Escuela" (School). Accident 20 August 1916.

Biplane No.1 of the Serie B (August 1917) with Hispano Suiza 150 hp engine.

Deperdussin type monoplane "Latino America" (January 1916) No serial number. Accident during test flight 19 March 1916. Reported as No.6 of the Serie E. equipped with a Gnome 50 hp engine. Classed as "Explorer" type with French engine.

Deperdussin type monoplane "Latino America" with the engine of the Moisant monoplane "Blue Bird" May 1916. Lack of engine power. Reported as the Serie F aircraft.

1-H-8 Parasol type aircraft. First of the Serie H aircraft equipped with Aztlalt 80 hp and later Gnome 50 hp. Test flown 5 May 1916. Changed to a French engine 29 March 1917. know as the "Libelula".

1-A-9 Biplano Serie A with Gnome 50 hp. Reported as the first Serie A biplane built. Reported destroyed during practice flights by 7 May 1919 report.

2-A-9? Biplane Serie A "La Biplana". 23 February.1917 gift to the republic of El Salvador.

2-E-10 Monoplane type Bleriot trainer with Anzani 60 hp. Ordered June 1916. Destroyed during practice per 7 May 1919 report. Other source say this was a "Serie D" aircraft.

3-E-10 A reported Bleriot type monoplane with a Anzani 60 hp engine.

3-E-11 Monoplane type Bleriot for training with Anzani 60 hp with short landing gear. Accident November 19, 1917 with cadet Domingo Valencia. Withdrawn from use due to wear per 7 May 1919 report. Other source say it was a "Serie D" aircraft.

4-E-11 Monoplane type Bleriot with Anzani 60 hp engine August 1916.

4-E-12 Monoplane type Bleriot with a Wright 60 hp engine with short landing gear. August 1916, aircraft destroyed in accident per 7 May 1919 report.

1-A-13 Biplano Serie A with Gnome 80 hp engine. Given to El Salvador February 1917. A reported 2-A-13 (sic) given to El Salvador per May 7, 1919 report.

2-A-14 Biplano Serie A with Gnome 80 hp. Later with Curtiss 100 hp. Replaced 1-A-13 that was given to El Salvador.

F-14 Monoplane Deperdussin combat type "Latino America" with Gnome 50 hp engine. Test flown April 1916

4-A-15 Biplane Serie A machine. Damaged May 16, 1917.

1-B-15 Biplane equipped with Gnome 100 hp. Probably first serie B. Tested with various engines. Was withdrawn from service as impractical per 7 May 1919 report.

3-A-15 Biplane Serie A with Anzani 80 hp engine.

3-A-16 Biplane Serie A with Anzani 80 hp. Destroyed during training flight per 7 May 1919 report.

4-A-17 Biplane Serie A with Aztlalt 80 hp engine. First truly built 100%-built in Mexico. Destroyed during practice flight per 7 May 1919 report.

5-A-18 Biplane Serie A with Aztlalt 80 hp engine converted to float plane version. Test flown at Veracruz August 1917 by Tte. Carlos Santana.

6-A-19 Biplane Serie A equipped with Hispano Suiza 150 hp. 26 June 1917; first Air Mail flight in the Mexican Republic by Tte. Horacio Ruiz. Fitted with the Hispano Suiza engine 3 July 1917. Damaged 29 September 1918 at Toluca.

7-A-20 Biplane Serie A with Anzani 100 hp 12 June 1917. Accident 28 February 1918 with Cadet Felipe Carranza. Destroyed during training flight per 7 May 1919 report.

8-A-21 Biplane Serie A equipped with Anzani 80 hp; later 100 hp Wright 60 hp, Aztalt 80 hp. Accident Nov.20,1917. Destroyed during practice flight per 7 May 1919 report.

9-A-22 Biplane Serie A equipped with Anzani 100 hp, later a Renault 60 hp. Tested 25 October 1917. Aircraft destroyed in accident 21 March 1919; Cadet Sivestre Valero suffered injuries to his face.

10-A-23 Biplane Serie A with Anzani 60 hp, later 80 hp November 1917. Accident 12 November 1917 with Anzani 80 hp 23 February 1918.

11-A-24 Biplane Serie A with 80 hp engine 7 Nov.1918. Aircraft suffered accident November 24, 1917 during force landing. Had extra horizontal stabilizer. Destroyed in flight training before May 1919.

12-A-25 Biplane Serie A with Aztlalt 80 hp engine, later Curtiss 100 hp October 1917. Accident October 25, 1917 with Cadet Rafael Altamirano. Accident November 17, 1917, with Cadet Jorge H. Bernard. Destroyed in practice flight before 7 May 1919 report.

13-A-26 Biplane Serie A equipped with Aztlalt 80 hp, later with Curtiss 100 hp and Anzani 80 hp October 1917.

14-A-27 Biplane Serie A with Aztlalt 80 hp July 1918. Bombing practice 2 November 1918.

15-A-28 Biplane Serie A with Hispano Suiza 150 hp Model Barcelona. Destroyed during practice flight before 7 May 1919 report.

16-A-29 Biplane Serie A with Gnome 100 hp. Accident Nov.19, 1917; pilot Capt. Diez Martinez.

17-A-30 Biplane Serie A with Aztlalt 80 hp. Destroyed during practice flight before 7 May 1919 report.

1-C-31 Microplano Veloz biplane fighter. February 1918 with Hispano Suiza 150 /160 hp. Used in funeral of the first pilot killed - Amado Paniagua.

18-A-32 Biplane Serie A with Anzani 100hp and later Gnome 100 hp. Had a "Sombrero" insignia painted on it. Withdrawn from use by 7 May 1919 report.

19-A-33 Biplane Serie A with Hispano Suiza 160 hp. Did a long distance flight 20 November 1918 from Mexico City, Pachuca, Tula, and Mexico City by Tte. P.A. Felipe H. Garcia. Later equipped with Curtiss 100 hp engine. Aircraft withdrawn from use per 7 May 1919 report.

20-A-34 Biplane Serie A damaged 28 Feb.1918. Equipped with Aztlalt 80 hp engine. Destroyed during training flight per 7 May 1919 report.

21-A-35 Biplane Serie A equipped with Anzani 70 hp, later with Aztalt 80 hp.

22-A-36 Biplane Serie A with Gnome 80 hp "La Paloma". Modified with a Renault engine.

23-A-37 Biplane Serie A. Dual control with Aztlalt 80 hp. Accident 16 March 1919 with some damage. Force landing 20 June 1918 in Puebla; pilot Tte. Jose E.Rivera. First night flight 30 November 1920 by Tte. Alfonso Virgen.

24-A-38 Biplane Serie A reported in service Sept.1920.

25-A-39 Biplane Serie A aircraft. Damaged at Puebla, Puebla, pilot Tte. Amado Paniagua.

3-H-40 Parasol Serie H

1-J-40 (?) Unknown type withdraw as being unpractical per 7 May 1919 report.

26-A-41 Biplane Serie A with Aztalt 80 hp. Later tested with the SS Mexico 130 hp, 22 May 1918. Aircraft later camouflaged with modified cockpit area.

27-A-42 Biplane Serie A with Aztlalt 80 hp engine.

28-A-43 Biplane Serie A aircraft. Destroyed in accident on the beach of Veracruz, 3 November 1918, killing Tte. Amado Paniagua first Mexican pilot killed in a aviation accident.

29-A-44 Biplane Serie A with Gnome 100 hp.

27-A-44 Biplane Serie A reported in book by Historian M.R. Romero.

30-A-45 Biplane Serie A with Aztlalt 80 hp. Aircraft destroyed in accident at Balbuena airfield, near Mexico City, killing its pilot the second Mexican killed in a accident in Mexico.
31-A-46 Biplane Serie A in service 31 October 1920 with Aztalt 80 hp engine.
8-H-47 Parasol Serie H with Aztalt 80 hp.
31-A-48 Biplane Serie A (book M.R. Romero)
9-H-48 Parasol Serie H with Aztalt 80 hp.
34-A-? Biplane Serie A. Damaged 6 March 1918 with pilot Samuel C. Rojas.
10-H-49 Parasol Serie H. Probably aircraft was not completed.
35-A-50 Biplane Serie A with Hispano Suiza 150 hp. Accident 17 August 1919 in Toluca; pilot was Tte. Ponce de Leon with a passenger who was injured. Force landing by pilot Tte. Jose E. Rivera on November 7, 1919. Next day, while aircraft was being recovered, the party was attacked by rebel forces. The Aircraft was damaged, and the pilot Rivera and the mechanic Pizana were captured and killed later by the Rebels.
32-A-51 Biplane Serie A with Aztalt 80 hp. Reported in construction in the TNCA.
37-A-52 Biplane Serie A with Hispano Suiza 150 hp. In service circa 31 October 1920.
38-A-52 Biplane Serie A reported by Historian Mr. Romero.
38-A-53 Biplane Serie A with Hispano Suiza 150 hp. Damaged in force landing 16 September, 1919. The pilot, Carlos Santa Ana, escaped after being attacked by rebels.
2-H-54 Parasol Serie H with Aztalt 80 hp.
3-H-55 Parasol Serie H with Aztlalt 80 hp. In service October 1920.
38-A-55 Biplane Serie A (reported by M.R. Romero).
2-H-56 Parasol Serie H with Aztlalt 80 hp.
4-H-56 Parasol Serie H with Aztlalt 80 hp. On January 10, 1919, tested with a "rexer" machine gun mounted to fired downwards on the side of the cockpit. The tests were successful.
6-H-58 Parasol Serie H with Aztalt 80 hp.
7-H-59 Parasol Serie H with Aztalt 80 hp.
5-E-60 Caudron type dual control aircraft with Renault 100 hp engine, December 1917. Reported in hangar w/o.engine per report dated 7 May, 1919.
33-A-61 Biplane Serie A with Gnome 80 hp. Used for nocturnal flights.
34-A-62 Biplane Serie A. Without engine in construction in the shops circa 1920.
39-A-63 Biplane Serie A. Without engine in construction in the shops circa 1920.
40-A-64 Biplane Serie A. Without engine in construction in the shops circa 1920.
4-H-65 Parasol Serie H. Reported in service September 1920.
41-A-65 Biplane Serie A. Without engine in construction in the shops.
11-H-66 Parasol Serie H with Trebol 35 hp engine, probably for ground runs only.
12-H-67 Parasol Serie H with Aztalt 80 hp. Preserved at the Army and Air Force Museum at Guadalajara, Jalisco.
1-S-68 Sopwith 1-1/2 Strutter biplane; British "Sop". Accident during take off 8 September, 1920, with the crew of Capt. Jimenez and Observer P.A. Felipe H. Garcia. (Tohtli Feb.1921).
2-F-69 Farman F-50 Bomber
10-H-69 Parasol Serie H. Lost in accident 28 September, 1920, with Tte. P.A. Julio Nava Salinas who survived.
3-F-70 Farman F-50 bomber. Flown by Corl. Ass. O'Neill. Reported to have serial number 3-B-70.
4-F-71 Farman F-50 bomber. Flown by Corl. O'Neill. Accident 3 August 1921. Also reported TNCA serial number 4-B-71.
1-B-72 Salmon Biplane Puro with Salmon 260 hp engine. Long distance flight Mexico-Veracruz-Tampico-San Luis Potosi-Mexico. Lost in accident 28 June, 1928, as 2-B-72 (sic), killing Tte. Eduardo Esparza and Ignacio Burgues. Aircraft painted with roundel insignias.
2-C-74 Curtiss Jenny with Curtiss 90 hp engine from the state government of the territory of Baja California of Col. Cantu.
2-B-75 Biplane Salmon. Damaged in fire with 1-B-72 in the hangars on 8 March 1921. Lost in accident in Chiapas 25 October, 1925, while flown by Pilot Pablo L. Sidar with Salmon engine no. 25401.
5-F-76 Farman F-50 bomber. Also reported to be 5-B-76.
6-F-77 Farman F-50 bomber. Also reported to be 6-B-77.
7-F-78 Farman F-50 bomber
1-D-79 Ansaldo Balilla fighter (Italian). Flown by Corl. O'Neill. Lost in accident 12 August, 1923, at Balbuena airfield killing the pilot, Ramon Alcala.
2-D-80 Ansaldo SVA Biplane (A.300). Lost in accident January 14, 1924, killing the pilot Capt. Francisco S. Espejel and Tte. Antonio Gabriel Moreno Matis.
1-E-81 Junkers Larsen JL-6 monoplane. Went over to the rebel side in January 1924. Destroyed at Tuxpan, Veracruz, when the city was about to fall to federal forces.
1-E-81(?) Biplane. Reported damaged 4 September, 1921, in accident or a fire.
1-E-82 Junkers Larsen JL-6 monoplane. Accident 4 February, 1921, later aircraft was destroyed on the ground by its crew after a force landing in rebel territory.
1-A-83 Avro 504 biplane trainer (504K).
2-A-84 Avro 504 biplane trainer (504K).
3-A-85 Avro 504 biplane trainer (504K).
4-A-86 Avro 504 biplane trainer (504K).
5-A-87 Avro 504 biplane trainer (504K).
6-A-88 Avro 504 biplane trainer (504K).
3-B-89 Salmon Biplane Serie B, two-seat general-purpose aircraft design by Ing. Lascurain y Osio circa 1924.
4-B-90 Salmon Biplane Serie B, circa 1924.
5-B-91 Salmon Biplane Serie B. Reportedly used in the 1920 retreat from the capital to Veracruz to cover the presidential trains.
8-F-92 Farman F-50 bomber.
9-F-93 Farman F-50 bomber.
10-F-94 Farman F-50 bomber.
11-B-95 Farman F-50 bomber.
12-F-96 Farman F-50 bomber.
13-F-97 Farman F-50 bomber.
2-E-98 Monoplane "Sonora" with Le Rhone engine. Designed by Ing. Lascurain y Osio.
7-A-99 Morane Saulnier MS.35 Parasol.
8-A-100 Morane Saulnier MS.35 Parasol. Force landing 20 March, 1923, Platon Sanchez, Veracruz.
9-A-101 Morane Saulnier MS.35 Parasol. Destroyed in an accident, Balbuena airfield 21 July 1923.
10-A-102 Morane Saulnier MS.35 Parasol with Le Rhone engine No.6, circa July, 1923.
11-A-103 Avro 504 biplane trainer (H9578) (504J).
12-A-104 Avro 504 biplane trainer. In service at the aviation school 1 April 1925 to 31 July 1929?.
13-A-105 Avro 504 biplane trainer (504J).
14-A-106 Avro 504 biplane trainer (504J).
15-A-107 Avro 504 biplane trainer (504J).
16-A-108 Avro 504 "Anahuac". The first Mexican built one?
17-A-109 Avro 504 "Anahuac".
18-A-110 Avro 504 "Anahuac".
22-A-111 Type unknown.
20-A-112 Avro 504 biplane trainer (504K- 8914).
21-A-113 Avro 504 biplane trainer with Le Rhone 35 engine, circa Nov. 1923. Aviation school from 1 April 1925 to 31 July 1929?.
19-A-114 Type unknown.
23-A-115 Avro biplane trainer with Le Rhone 27 engine (N.98), circa November 1923.
24-A-116 Avro biplane trainer.
25-A-117 Type unknown.
26-A-118 Avro 504. Accident 30 December 1924 with 36-A-128. Pilot Major. Pablo L. Sidar.
27-A-119 Avro 504 biplane trainer.
28-A-120 Avro 504 biplane trainer with Le Rhone 38 engine, circa November 1923.
29-A-121 Avro 504 biplane trainer.
30-A-122 Avro 504 biplane trainer.
31-A-123 Morane Saulnier MS.35 Parasol. Damaged 6 March 1923. Seen in service Nov. 1927.
32-A-124 Morane Saulnier MS.35 Parasol. Without engine November 1923.
33-A-125 Avro 504 biplane trainer.
34-A-126 Avro 504 biplane trainer.
35-A-127 Avro 504 biplane trainer.
36-A-128 Avro 504 Biplane trainer. Accident with 16-A-118 on December 30 1924. Pilot Capt. Francisco Ferriz.
37-A-129 Avro 504K (J5793) British made.
3-E-130 Tololoche Quetzalcoalt type fighter aircraft with Mono-Gnome 160 hp. Lost in accident in 1925; probably the pilot was Jose Fabris.
4-E-131 Quetzalcoalt Serie I. Lost on December 23, 1923 near Ixtapalapa D.F. Equipped with BMW engine.
5-E-132 Training Parasol type aircraft with Le Rhone 80 hp engine, circa 1922.
8-E-133 Monoplane "Mexico" circa 1923.
41-A-133 Avro "Anahuac" training biplane, circa November 1927.
??-A-134 Avro Biplane trainer (?).
43-A-135 Avro :Anahuac" biplane trainer, circa November 1927.
38-A-135 Brown Special biplane.
6-E-136 Quetzalcoalt Liberty. Equipped with Liberty 400 hp; later replaced by 185 hp BMW.
44-A-136 Avro "Anahuac" biplane trainer, circa November 1927.
39-A-136 Brown Special biplane.
45-A-137 Avro "Anahuac" biplane trainer, Nov.1927.
41-A-138 Avro "Anahuac" biplane trainer.

Note: from here on there are gaps in the numbering system for the aircraft built or assembled at the TNCA.

45-A-142 Avro "Anahuac".
51-A-??? Avro "Anahuac". In service November 1927. Reported in service at the military Aviation School from 1 April 1925 to 31 July 1929(?).

52-A-144 Avro "Anahuac". In service November 1927.
53-A-145 Avro "Anahuac". In service November 1927.
56-A-148 Avro "Anahuac". In service November 1927.
42-A-149 Avro "Anahuac".
43-A-150 Avro "Anahuac". In service November 1927.
51-A-158 Avro "Anahuac". In service November 1927.
42-A-159 Avro "Anahuac". In service November 1927.
71-A-163 Avro "Anahuac". In service November 1927.
72-A-??? Avro "Anahuac". In service November 1927.
75-A-167 Avro "Anahuac". In service November 1927.
76-A-168 Avro "Anahuac". In service November 1927.
64-A-??? Avro "Anahuac". Lost in accident 10 August 1927 Campo Aereo de Balbuena. Tte. P.A. Jose J. Jasso Puentes killed.
66-A-173 Avro "Anahuac". In service November 1927.
67-A-??? Avro "Anahuac". In service military Aviation School 1 April 1925 to 31 July 1929(?).
68-A-175 Avro "Anahuac". The military Aviation School reported it in service from 1 April 1925 to 31 July 1929(?). Donated to the San Luis Potosi School 1929(?).
69-A-176 Avro "Anahuac". In service November 1927.
75-A-182 Avro "Anahuac". In service November 1927.
82-A-189 Avro "Anahuac". In Service November to December 1927.
89-A-??? Avro "Anahuac". In service with the military Aviation School 1 April 1925 to 31 July 1929(?).

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Captions for the photos on pages 35-36. (All photos via the author.)

1. Ansaldo Balilla A-1.
2. Huntington Tractor Biplane.
3. Avions TNCA.
4. Serie A 14A27.
5. Serie A 6A19.
6. Serie A No. 1 El Salador.
7. Serie A 1-H-8 Parasol.
8. Microplano Veloz.

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#31 Le Bataille des Ardennes. This is another issue of this series with no small-air-force interest. However, that said, it is another excellent text and illustrative coverage of an important aerial campaign: informative text (albeit in French), great photo selection and reproduction, colorful side-view drawings, color drawings of both Allied and Luftwaffe uniforms, and a review of a model of an aircraft related to the topic of the issue (a Revell 1/72-scale P-47D finished as the "Bag Ass Bird II"). Hopefully, a list of the color side-view drawings will be sufficient to give an accurate impression of the contents: P-47D (6), B-26 (3), Mosquito (1), Typhoon (4), P-51D (4), Fw 190A (1), Fw 190D (3), Spitfire LF IXE (1), Bf 109K (4), P-61A (3), P-38J (1), and F-5E (1). Also, there is a color side & plan view drawing of an Ar 234.

Le Bataille des Ardennes is recommended to everyone with an interest in WWII aerial campaigns and who is not afraid of the French text.

#32 La Guerre d'Hiver 1939-1940: Staline attaque la Finlande. This eagerly awaited volume on the "Winter War" turns out to be somewhat of a disappointment. It's not that the format is not up to the usual excellent Batailles Aeriennes style. It has all the excellently reproduced photos representing both sides of the conflict including enough ground and sea machines to give a gut feeling for the times. The usual maps are included to give an idea of the flow of the battle. The appendices give detailed information about the victories and losses. And, the color side-view drawings are, as usual, excellently drawn. It is the selection of color drawings that disappointed this reviewer. I had expected more color drawings of Finnish aircraft. There are only seven color side-view drawings of Finnish a/c [Bristol Bulldog, Fokker D.21 (3), Bristol Blenheim I, MS.406, & Fokker C.X] and two color two-view drawings (top and side view) [Gladiator and Hart]. Soviet a/c get quite a bit more coverage with 18 color side-view drawings [ANT-6, TB-3, SB-2 (4), MBR-2, I-16 (3), U-2, I-15bis (3), R-5, I-153, & DB-3 (2)]

The rest of the book does not disappoint. The chapters are (1) Introduction: 2 pages including 5 photos of high-placed person. (2) Les forces aeriennes en presence: 7 pages including 16 photos of Finnish a/c. (3) L'aide estangers: 6 pages including 13 photos of Finnish a/c (of particular interest are the Blackburn Roc and ASJA Jaktfalk). (4) Les operations aeriennes jour après jour: This is the longest chapter with 49 pages including 123 photos (5) Annexe: 6 pages of tables listing commanders; victories (date, place, unit, pilot, Finnish aircraft serial, Soviet a/c type, and unit. (6) Uniformes: 2 pages with ten color drawings of Finnish airmen in uniforms. (7) Maquette du Fokker D.XXI: 3 pages on building the 1/72-scale MPM kit including 8 color photo of the completed model.

Don't let my disappointment about the paupacy of color drawings of Finnish a/c deter you from obtaining this book. It just that the Batailles Aeriennes series has set such high standards in the past, that I expected to feast on a plethora of color drawings of Finnish a/c. *La Guerre d'Hiver* is highly recommended for anyone interested in the Winter War, the Finnish Air Force, or the Soviet Air Force.

Meidagen 1940

The Dutch Air Arms' Defense Against the German Invasion, May, 1940

Chapter 5

The End of the Beginning

"In due course, with God's help,
The Netherlands will regain their European territory..."
Queen Wilhelmina,
Upon her departure from
The Hague, 13 May 1940

[Author's note: The first 27 years of the existence of the Royal Netherlands Air Force (RNLAF) is separated from contemporary history by the five year occupation of Holland by Nazi troops from May 1940 to April 1945. Thus, the defeat of the Militaire Luchtvaart in Meidagen '40 represents the end of the beginning of Dutch Air Force history.]

On the evening of May 14th, ML ground crews began wrecking their remaining aircraft in order to prevent them from being used by the Germans. At Schiphol, all of the Combined JaVA's D.21s (and the one D.17) were destroyed; the commander of went out and shot holes in the fighters' fuel tanks with his own service revolver so that the ground crews could set the planes afire. (Note 1) Later that day, he and many of his men escaped to Great Britain in a pair of KLM DC-2s. Six other KLM DC-2s were captured by the Wehrmacht, three of them later seeing service as Lufthansa airliners. Meanwhile, four other ML members escaped from Schiphol in the last remaining Koolhoven FK-43 single-engine light aircraft (#965).

In spite of their best efforts, seven D.21s were captured intact by the Germans, one of which—found at the Fokker factory—was used as a source of spare parts. Additionally, four T.5s were captured intact—though all were unserviceable. One of these (#859) was repaired and, apparently out of academic interest, was test flown, for it was later seen in Luftwaffe markings. (Notes 2 and 3)

But it was the Fokker G.1 that was to survive the longest wearing new colors. Of the original 36 G.1s in the ML inventory, 11 of them were captured intact, one of these being used as a spare part donor for the others. Additionally, 25 Wasp-engined Export G.1s were also captured, either on the airfields or at the Fokker facilities. While one was used as spares, the unfinished examples on the Fokker assembly lines were ordered completed by the Germans and, of the total, 16 of them were ferried to the Luftwaffe's Flugzeugfuehrer-schule (B)8 ("Aircraft Leader School B-8") at Wiener-Neustadt, Austria. (Notes 4 and 5) One of the G.1s did not make it: #362 was used in a daring escape by two Fokker employees (a test pilot and the chairman of the Fokker Company board of directors) to England on May 5th, 1941—almost a full year since the opening bomb blasts at Schiphol had sounded.

While the operational and training units trapped in Vesting Holland became casualties of war, the Elementaire Vliegschool at Vlissingen, located at one of the westernmost points in the Netherlands, had a chance to escape. The instructors and pupil-pilots were able to fly their Fokker S.4s and S.9s across Flanders to northern France in the hope that their aircraft would be dismantled, crated and shipped to the Netherlands East Indies (NEI). Some eight S.4s and 15 S.9s were flown initially to Boulogne and Dieppe. But before the shipment to the NEI could be organized, it became apparent that they were about to be trapped in the Dunkirk pocket and the 18 remaining ML aircraft (6 S.4s, 11 S.9s and one C.10—the rest had been lost in accidents or rendered unserviceable for various reasons) were ferried further west to Caen, France. However, because of the subsequent rapid collapse of France, overwhelming German air superiority and the chaos of those times, the dauntless Dutch airmen eventually had to abandon their aircraft as they were evacuated by ship to Great Britain. There, these pilots—plus some 286 other ML personnel rescued from Haamstede and Vlissingen by British and Dutch ships—formed the nucleus of the Free Dutch Forces in the United Kingdom. (Note 6)

In its defeat, the Militaire Luchtvaart flew 332 sorties and lost 94 of its aircraft in air-to-air combat or to German bombing. A total of 75 ML personnel (20 officers, 25 NCO's and 30 enlisted men) lost their lives in their valiant defense of their homeland. Because of their heroic efforts the ML was awarded the Militaire Willems-Orde by Queen Wilhelmina.

But while these heroic efforts failed to save their home country, they did contribute greatly to the survival of the last bastion against Adolf Hitler: Great Britain. In fact, the greatest contribution made by the Veldleger and the ML was the severe losses that they imposed upon the German airborne forces: 193 Ju.52/3m transports destroyed, the mauling of the 22nd LL Div (40% of its officers and 28% of its troops were killed in the assault), and the wounding of General Kurt Student, the commander of the 7th Fl Div and architect of the German airborne forces. The KGzbV.2 was all but destroyed, eliminating almost 50% of the Luftwaffe's air transport capability and preventing this arm's ability to participate in strength in any summer or autumn invasion of Great Britain. As telling as the loss of most of the German Navy in the Norwegian campaign and the escape of most of the British Army from the bomb shattered beaches of Dunkirk, the crippling of the Luftwaffe's airborne assault capability also helped prevent an even greater catastrophe later in 1940. So for all their tragic sacrifice, the Dutch pilots, aircrew, ground crew and troops could take heart then—and take pride now—in the knowledge that their valiant and seemingly vain efforts safe-guarded the place and the means for the exiled Dutch forces to continue their fight against the Nazis and eventually to regain their national freedom from tyranny.

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End Notes

1. The Combined JaVA aircraft burned at Schiphol were: D.17 #205 and D.21s #212, #219, #221, #224, #235, #240, #242, #243, and #244.
2. The seven D.21s were captured intact by the Germans were #217, #220 (at the Fokker factory and used as spares), #228, #230, #231, #232, and #245.
3. The four T.5s were captured by the Germans were: #852, #859 (damaged by bomb splinters during its scramble takeoff on May 10th), #863, and #864 (at Fokker after a crash the month before).
4. The 11 Mercury-engined G.1s captured intact were: #300 (location unknown), #301 (location unknown), #307, #312, #314, #315, #318, #321, #323, #327, and #332. Four were at Bergen (#315, #318, #321, and #332); the others were probably at Schiphol. Aircraft #323 was used as spares.
5. The 25 Export G.1s captured by the Germans included: At Schiphol airfield: #340 (prototype); #342, #343, #346, and #347 (all accepted and operational); and #350, #352, #356, #357, and #361 (all complete but not yet accepted by the ML). On Fokker assembly line: #341 (there under repair—used as spares), #344, #351, #353, #358, and #359. At Fokker Pakhuis depot: #362-#365. Note #362 was flown to England and never made it into the Luftwaffe inventory. At LVB Depots: #345 and #348 (at Ockenburg), #349 (at Soesterberg), and #354 and #355 (location unknown)
6. The escaping aircraft were: S.4s: #103, #107, #112, #117, #126, and #128, S.9s: #34, #35, #36, #38, #40, #41, #43, #44, #45, #47, and #49. And, C.10: #700.

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Captions for photos on pages 17-20. (All photos from the Thijs Postma Collection unless otherwise noted.)

A. The DH-90 "Dragonfly" was a twin-engine, five-seat executive transport that was a scaled-down version of the popular DH-89 "Dragon Rapide" small, eight-passenger biplane airliner of the early 1930s. Powered by a pair of 130hp Gipsy Major air-cooled, inverted in-line engines, it had a cruising speed of 125mph (201km/hr). Donated to the *ML* for service as the *Veldleger* Commander's personal transport, it was based at Ypenburg where it was seriously damaged by the battles at that airfield on May 10th. Here it is shown being inspected by German troops.

B. Koolhoven FK-43: While not a foreign aircraft in Dutch service this FK-43 illustrates what this type (see SAFO #112, Photo P) looked like in *ML* "warpaint". No.965 was the former PH-ASN, which was used as a charter and air-taxi aircraft for the Dutch national airline, KLM. It was based at Schiphol and was assigned to II-1.LvR as a training plane. It survived all attacks and on May 15th it was flown to England by the experienced sport aviator Justus Heymans, carrying three other *ML* personnel. There it was used as a liaison aircraft by the RAF. After the war it returned to Holland and flew once again with KLM, this time as PH-TCN.

C. The DH-85 "Leopard Moth" was a three-seat "touring" monoplane also powered by the 130hp Gipsy Major engine and cruised at a speed of 119mph (191km/hr). Four were taken into the *ML* inventory. No.961 was the former PH-VYG, which was owned by the Dutch National Flying School. It became the personal transport of the 2.LvR and was flown by Capt I. A. Aler, later the Chief of Staff of the KLu. It may have been lost at Soesterberg in the Meidagen fighting.

D. De Havilland DH-85 "Leopard Moth" in the UK: Following the evacuation to the UK, the Dutch airmen were inducted into the RAF and the Dutch government-in-exile was established in London. For communications with Dutch-manned units, additional (RAF) "Leopard Moths" were obtained, some of the 44 impressed for service in just that role. Here a Dutch in-exile (note orange tri-angle on the nose) "Leopard Moth" is seen at an RAF airfield, probably on the occasion of a visit of HRH Prince Bernhard, a general or some high ranking staff officer.

E. The Bücker Bü.131 "Jungmann" was an extremely acrobatic two-seat elementary trainer used by the *Luftwaffe* for training fighter pilots. It was powered by a 105hp Hirth HM 504A four-cylinder, in-line air-cooled engine, giving it a speed of 112 mph (180 km/hr). But more important it performed aerobatics beautifully, making it—and its cousin, the exceptionally nimble single-seat Bü 133 "Jungmeister"—popular at air meets and rallies, and leading the LVA to order this one in 1937 for evaluation as a fighter pilot trainer.

F. The Bü.131 (#75) competed against the Koolhoven FK-46 (#76) for the fighter-trainer role and was to be license-built by the Schelde Aircraft Company. Even though it won the competition, the need for funds for combat aircraft resulted in postponing the order until too late. Thus #75 was the sole example of the Bü.131 in the *ML* inventory and on May 10th was based at De Vlijt airfield on Texel Island with the *Jachtvliegschool* (Fighter Flying School). It was not damaged in the repeated *Luftwaffe* bombings and wound up being taken back by the conquering Germans.

G. The North American NA-27 (design number NA-16-2H) was a two-seat fighter-trainer with fixed undercarriage (USAAC designation BC-1) that was originally designed by the General Aviation Corp as the GA-16. While the original NA-16 was the prototype for the USAAC BT-9 basic trainer (and later sold to Honduras as the NA-18), two other company demonstrators were built for promoting export sales. This example was brought to Holland by Fokker Aircraft and registered as PH-APG in the hopes of obtaining orders for license production. However, with the onset of WW2 it was purchased by the *ML* as #997 and was assigned to the *Jachtvliegschool*. Here it is shown on a training flight to Vlissingen airfield.

H. Powered by a 500hp Pratt & Whitney R-1340 Wasp radial engine, the NA-27 had a top speed of 208 mph (335 km/hr) and was an excellent training plane for young fighter pilots. It had full instrumentation, dual controls, and provision for mounting twin 7.9mm machine guns in the wings and a flexible machine gun in the rear cockpit, although there is no indication that these were ever carried by #997. Here the NA-27 is being readied for flight at De Vlijt airfield, where it was destroyed on May 11th by *Luftwaffe* air attack.

I. Three Focke Wulf FW 58B-2 "Weihe" ("Kite") on the ramp at Schiphol. A total of five FW 58Bs were acquired by the *ML* in 1939-40. The FW 58B was a modern, twin-engine, retractable gear aircraft used for training pilots, observer/bombardiers and air gunners for the Fokker T.5 medium bomber. It was powered by a pair of 240hp air-cooled Argus As 10C inverted-V engines that provided a top speed of 162mph (260km/hr) at sea level. It had provision for a single 7.9mm machine gun in the nose and the open dorsal position for training air gunners.

J. One of the first three FW 58Bs delivered, #197 had a productive career with the *Meermotorige Vliegschool* (Multi-engine Flying Schoo)l. It arrived in May 1939 and was initially based at Soesterberg airfield. During the "November Alarm" the school moved to De Vlijt airfield on Texel Island. This example—along with its sister-ship #196—was destroyed there before the arrival of German troops in May 1940.

K. Although it arrived in early 1940, here #198 is shown in-flight with the historic LVA markings (tri-color roundel with orange center dot). This aircraft did not have a long life with the *ML*. On March 13, 1940, when a local resident of Texel Island became seriously ill the Flying School Commander attempted to evacuate him, with a doctor, to a mainland hospital. The aircraft took off into the gathering darkness and soon the pilot became disoriented, and running low on fuel, was forced to make an emergency landing in a shallow part of the Waddenzee. The patient, doctor and two crewmembers were rescued by an *MLD* Fokker C.VIIIw, but the "Weihe" was lost.

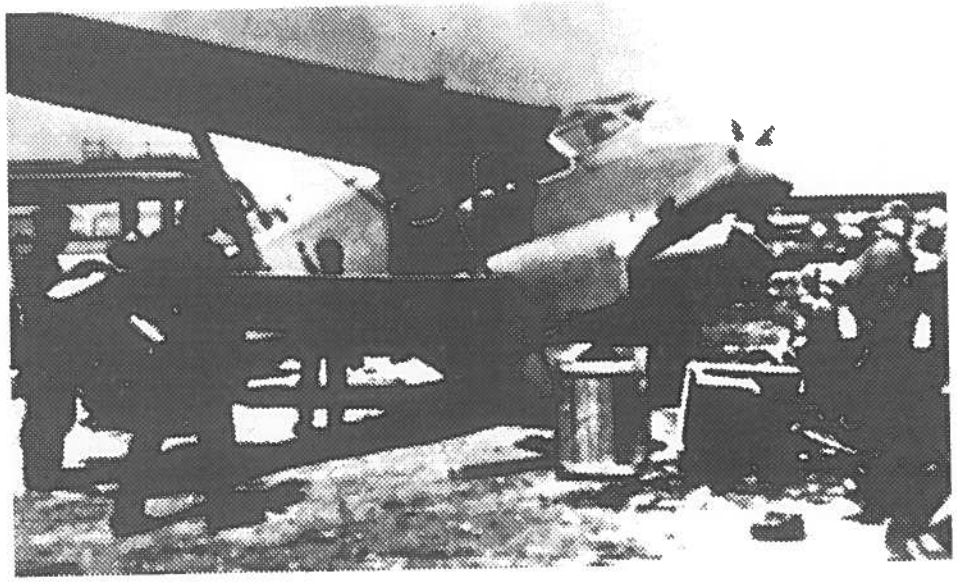
L. Focke Wulf FW 58B-2 "Weihe" #199: The last "Weihe" acquired, was damaged during a forced landing in April, 1940, winding up wheels up on its belly in a wet polder. It was lifted out of the mud, the gear lowered and wings removed and was towed overland, put on a barge and shipped to Schiphol for repair in the KLM workshops, where on May 10th it was destroyed by the German bombing raids.

M. Three ML training planes at De Vlijt airfield, Texel. In the foreground is a Focke Wulf FW 58B-2 multi-engine aircrew trainer, behind it is the sole Bücker Bü.131 "Jungmann" aerobatic trainer acquired by the *ML*, and to the left is Fokker C.5d #652. In the background it appears that ground crewmen are bringing wheelbarrow loads of small practice bombs with which to arm the Fokker for a bombing training mission.

N. The Focke Wulf FW 58B-2 was useful for training the entire crew of a large combat aircraft such as the Fokker T.5. This included the observer/ bombardier in the nose, pilots, radio operators and aerial gunners. Here a crew appears to have returned from a sortie. Note the heavy leather flying suits—especially for the exposed gunners—and the steel helmet. The second from the left is probably the instructor pilot since he carries the paperwork and is not wearing a flying helmet.

O This view, with two proud ground crewmen posing with the new FW 58B "Kite", shows to great effect the glazed nose, with its provision for a 7.9mm machine gun in the tip and the aerodynamic casing for the *Luftwaffe* Lotfe bombsight (it is unknown if this type was fitted in the *ML* FW 58s). Also this view shows the external bracing struts for the wing and the ungainly "trailing arm" type retractable landing gear

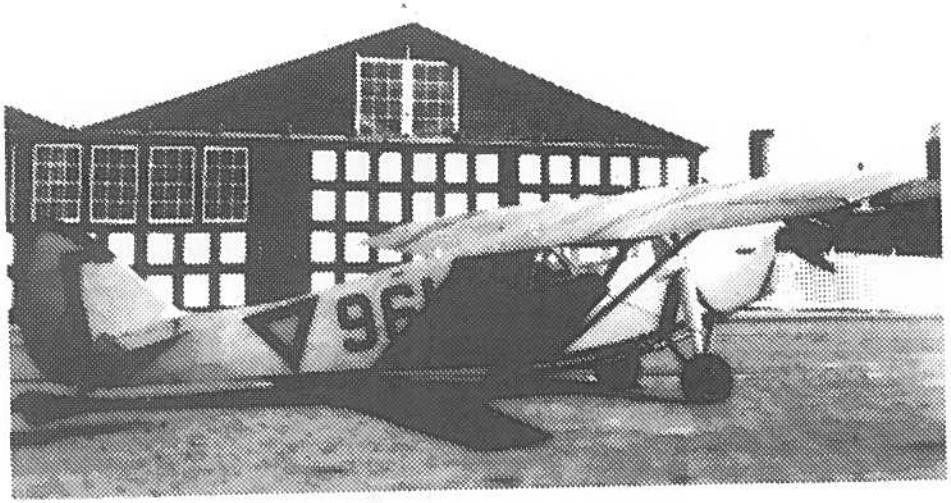
P. A Focke Wulf FW 58B starting its engines on a wintry day, 1939/40. Note the instructor standing on the wing. This view shows to great effect the glazed nose, with its provision for a 7.9mm machine gun in the tip and the aerodynamic casing for the *Luftwaffe* Lotfe bombsight (it is unknown if this type was fitted in the *ML* FW 58s). It also shows the external bracing struts for the wing and the ungainly "trailing arm" type retractable landing gear.



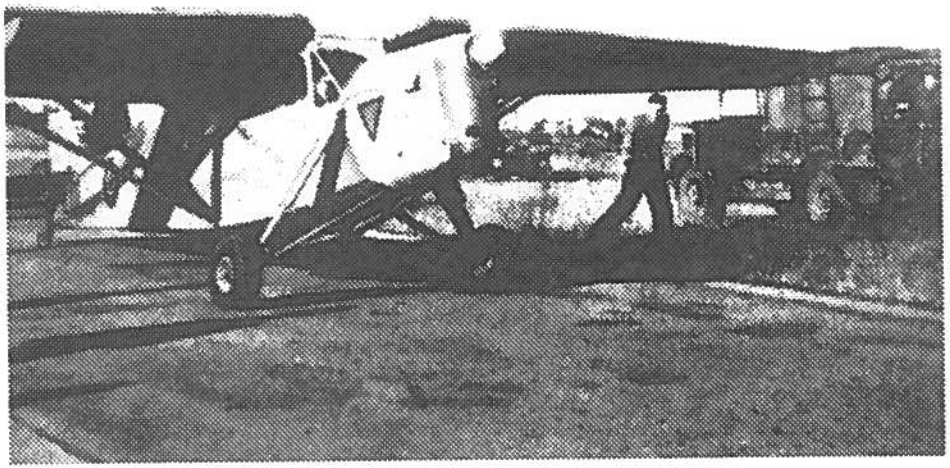
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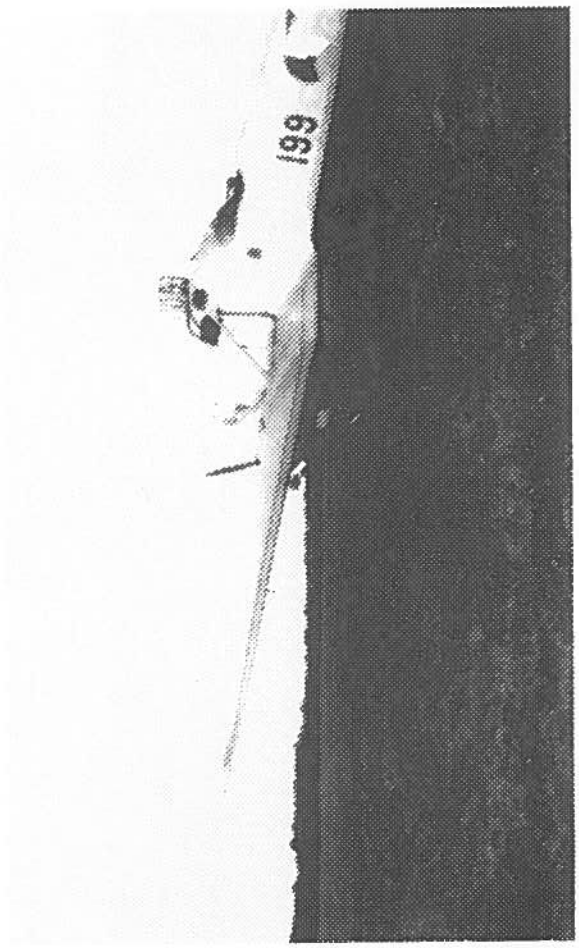
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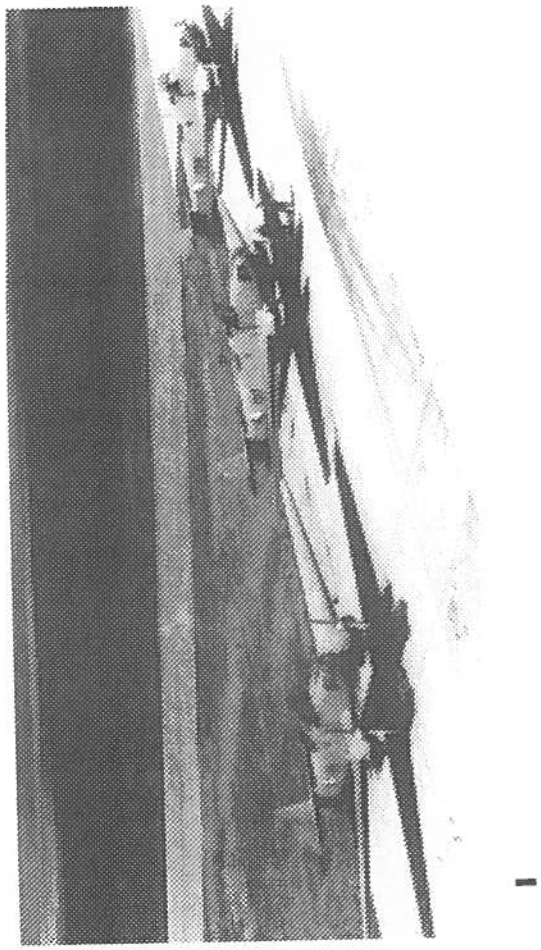
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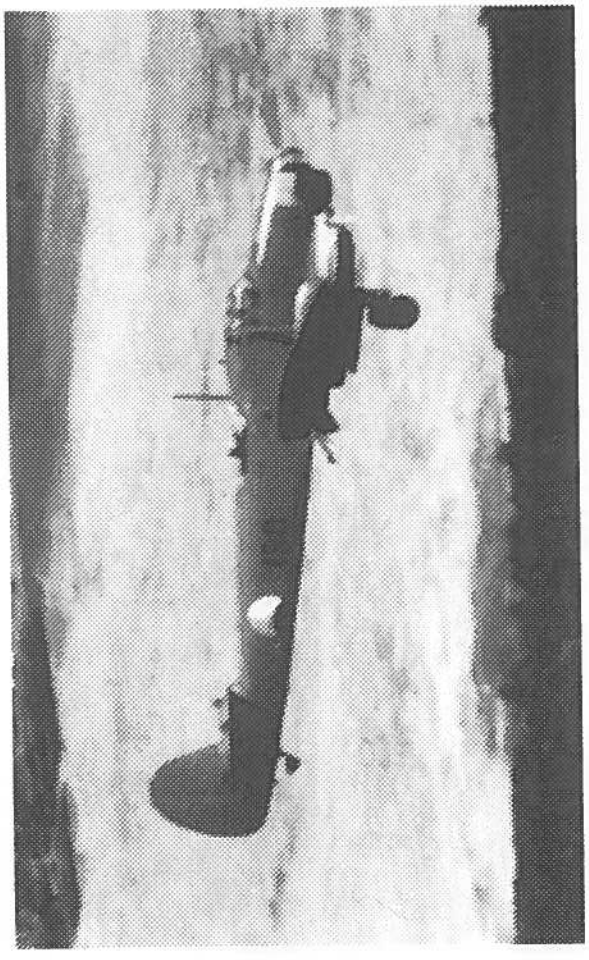
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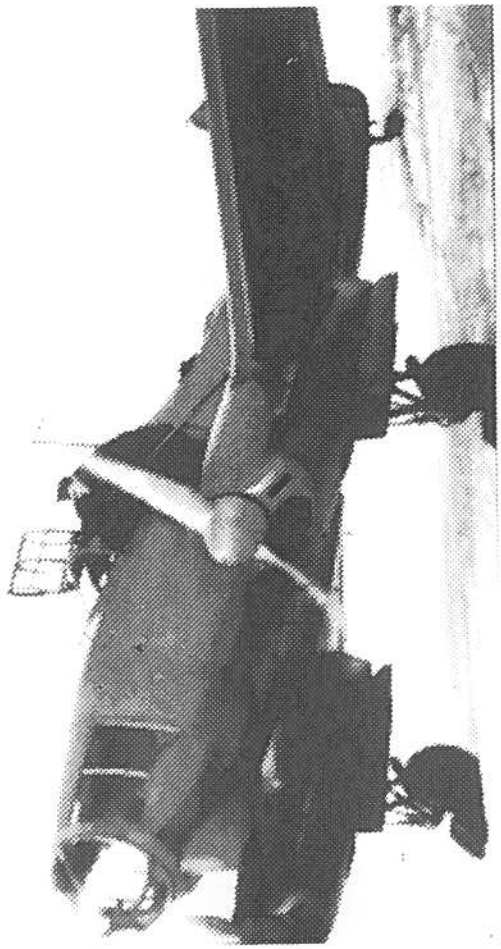
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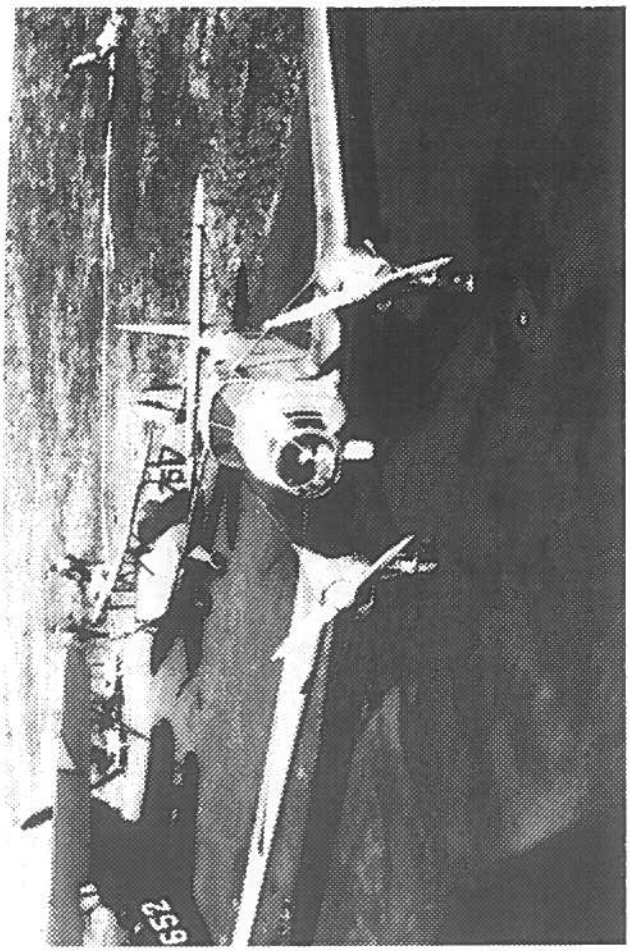
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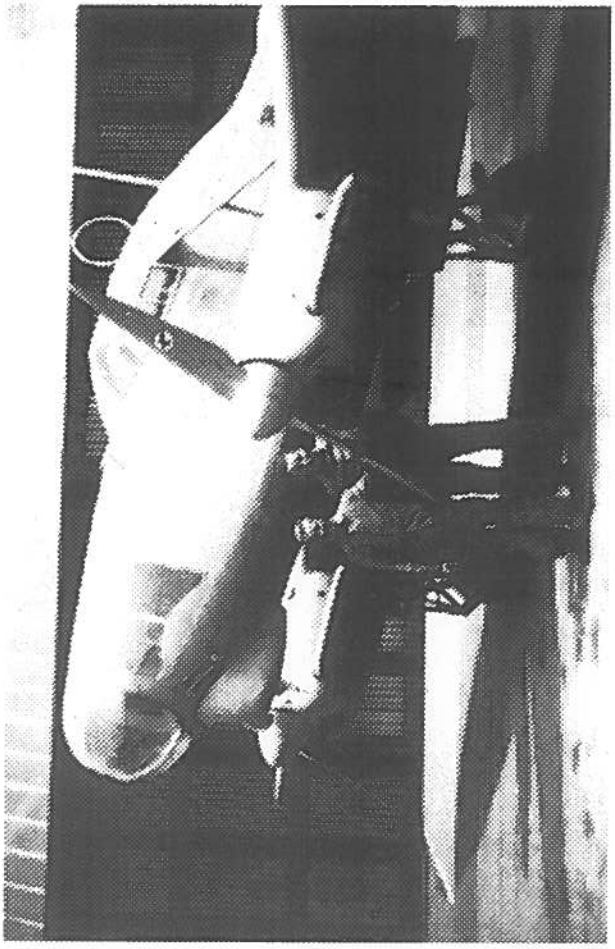
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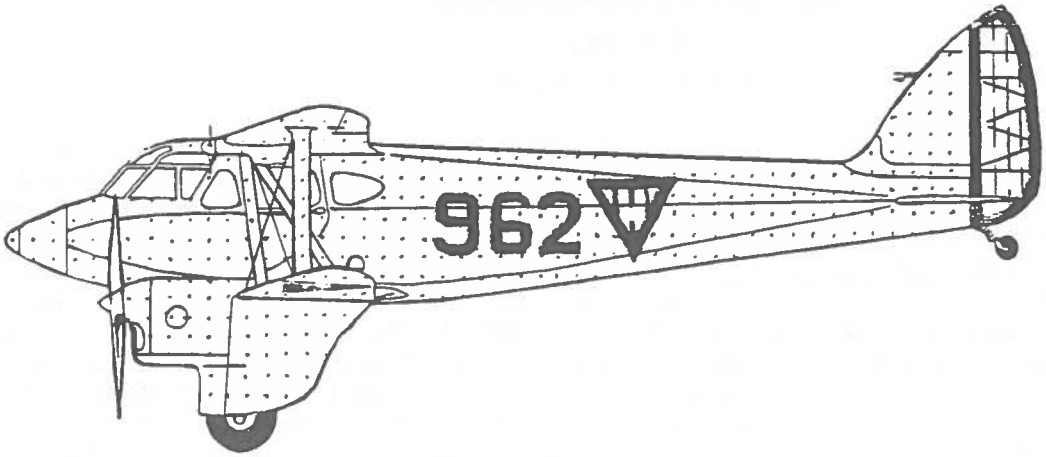


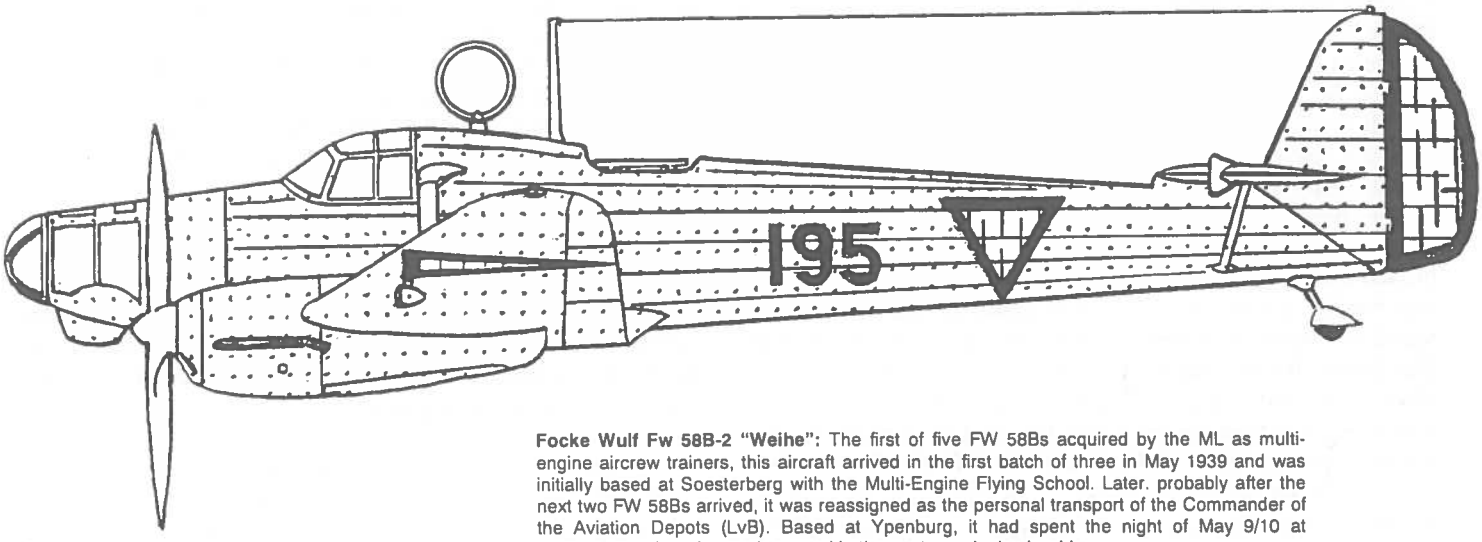
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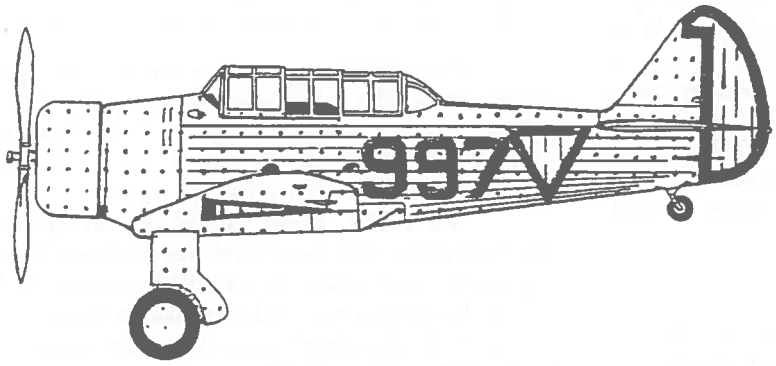
O

De Havilland DH.90 "Dragonfly": This twin-engine, five-seat executive transport was originally owned by Dr.(Eng.) de Kok, president of the KNVvL ("Royal Netherlands Aero Club"). Registered as PH-KOK it was flown by Dr. de Kok on a round trip flight to the Dutch East Indies in February-March 1937. During the mobilization Dr. de Kok donated it to the ML which used it (as #962) as the personal transport of the Field Army Commander, LtGen J.J.G. Baron van Voorst tot Voorst. It was damaged by German attacks at Ypenburg and written off on 10 May 1940.





Focke Wulf Fw 58B-2 "Weihe": The first of five FW 58Bs acquired by the ML as multi-engine aircrew trainers, this aircraft arrived in the first batch of three in May 1939 and was initially based at Soesterberg with the Multi-Engine Flying School. Later. probably after the next two FW 58Bs arrived, it was reassigned as the personal transport of the Commander of the Aviation Depots (LvB). Based at Ypenburg, it had spent the night of May 9/10 at Waalhaven, where it was destroyed in the next morning's air raids.



North American NA-27: The NA-27 was a development of the NA-16 design series that resulted in the USAAC BT-9 and BT-14 basic trainers, and was one of two built in late 1936 as company demonstrators for export sales. Bought by Fokker in the hopes of license-building the fighter-trainer version (same as USAAC BC-1 but with fixed gear) for European sales, it was brought to Holland in 1937 and two years later purchased by the ML. Registered as #997 it was used by the Fighter School at Texel but was destroyed by a Luftwaffe air raid on the second day of the campaign.

Source: *KLu Vliegtuigen* by Wim Schoenmaker and Thijs Postma.

Color Key

- LVA Blue FS 25189
- Dutch Insignia Orange FS 22243
- Bare Metal (Silver) FS 17178
- Black/ Rubber

SOURCE: Camouflage en Kentekens, by J. H. N. Greuter, *et al.*, Bergen, NL: B.V. Bonneville, 1997, pages 41, 219, 221

The Markings of Meidagen

The Dutch Air Arms' Camouflage Markings and Unit Emblems May 1940

Frans Scheve and Doug Dildy

National Insignia

Ever since William of Orange united the seven northern provinces of Holland under one flag in 1579 and led the revolt against the Spanish two years later, orange has been the "national color" of the Netherlands and thus figured prominently in the national markings of its air force. From its earliest days, the Dutch air arm has worn national insignia brightly adorned with orange, beginning with large orange disks on the wings and fuselage so that Allied and German would recognize them as Dutch-and neutral- during WW1. In 1921, the nation adopted a trisected red-white-and-blue disk (taken from the national flag) with a smaller, but noticeable, orange disk in the center.

However, an incident only 13 days into WW2 motivated a change back to a prominent "Neutrality Marking". That day, a Dutch Naval Air Service Fokker T.8W on neutrality patrol off the Dutch coast encountered and was shot down by a Luftwaffe Heinkel He 115A reconnaissance floatplane. The German excuse for this incident was that the Dutch marking was mistaken for the red-white-and-blue roundel of the RAF. Consequently, it was quickly decided that a return to some form of distinctive, highly visible "Neutrality Markings" was in order.

Initially the original WW1 orange disk was favored and, in fact, it was applied to a few Dutch naval aircraft. However, it was readily apparent that it would easily be mistaken for the round, red Japanese *hinumaru* when used on Dutch aircraft in the East Indies. Instead, the large orange triangle, bordered by thick black trim, was adopted (Figure 1) and on September 23rd *Koninklijk Staatsbesluit* No.589B (Royal Government Decree) ordered them applied to all Dutch aircraft, effective October 1st.

Triangles were applied in six positions: one on each side of the fuselage, two on the wing tops and two on the wing bottoms. The size of the triangles depended on the aircraft type. As a general rule the wing triangles were to be applied halfway between fuselage and wingtip, with the height of the triangle corresponding to the width of the wing. The fuselage triangles were applied between the trailing edge of the wing and hinge axis of the rudder, with the height of the triangle being the thickness of the fuselage. This hastily introduced marking caused some practical problems on some aircraft types; therefore the triangle is seen in different sizes and locations. One thing all triangles had in common was that they had a black border, 10 cm in width. Additionally the rudder was painted orange as well, again bordered by a 10 cm wide black edge.

Aircraft Colors

Older aircraft types, such as the Fokker C.5d, C.I0 and D.17, were painted overall dark green (called LVA Khaki) and light blue (LVA Blauw) undersides. The khaki color is a glossy dark green, most accurately replicated by Humbrol H-163 (FS14064). The glossy light blue color is best replicated by Humbrol H-115 (FS 15189).

Camouflage Patterns

The newer aircraft types, such as the Fokker D.21, G.1, T.5 and the Douglas DB- 8A/3N, had a three-color camouflage consisting of dark green, tan (also referred to as sand or beige) and dark brown, all in a matte/flat finish. Contrary to many other paint schemes worldwide, the dark brown color was also used as the standard color for the aircraft undersides instead of a light "sky" color, such as light shade of blue or gray. The true color specifications for the camouflage colors are not known, and sources differ considerably on the actual color or FS shade selection. In our opinion Humbrol H-177 (FS30059) is closest to the dark brown color, Humbrol H-172 (FS34077) is the best match for the green color and Humbrol H-63 (FS30257) is best for representing the tan. Interestingly, each type aircraft had two camouflage patterns, one being the mirror mage of the other. The first half of the series of aircraft (for instance D.21s #212 thru #229) would have one of the two versions applied, with the rest of the run (D.21s #230 to #247) having the other. However, photographic evidence indicates that the painters did not always conform closely to the prescribed patterns, so consult photographs of the specific aircraft you intend to model to be sure.

Individual Aircraft Numbers

By 1940 almost all aircraft had a registration number consisting of two (for elementary training aircraft), three (advanced training and combat aircraft) or four (experimental) figures. For combat aircraft, the serials were determined by role according to the following table:

100-199: Advanced Training Aircraft (S.4, FW-58B)
200-299: Single Engine, Single Seat Fighters (D.17, D.21)
300-399: Two Seat Combat Aircraft (G.1 and DB-8A)
400-499: Small Two Seat Observation Aircraft (FK-51)
500-699: Two Seat Observation Aircraft (C.5d, C.8/9)
700- 799: Two-Seat Reconnaissance Aircraft (C.10)
800-899: Multi-place Combat and Transport Aircraft (F .7a/3m, T .5)
900-999: Impressed or Volunteered Aircraft (DH-85, DH-90, FK-43)

The serial, or registration, number was applied on both fuselage sides. The curled type *(serif)* figures (Figure 2A) were used from the beginnings through the 1930s. Even in May 1940, a few older aircraft (mostly only C.5d's) still had their serial number displayed in these older type figures.

The newer aircraft, as well as most repaired, rebuilt, or repainted older types were numbered in standard "block" figures (Figure 2B) used during the late 1930s and into the Mobilization Period. The figures were either painted in black on light surfaces (e.g. gray or aluminum) or in white on darker surfaces (e.g. khaki green or ML-camouflage).

Manufacturer's Information

On the later Fokker aircraft, the D.21 and G.l, a white Fokker emblem was placed on the vertical stabilizer, using the flowing "Fokker" logo, aircraft designation, and engine type. Figures 3A and 3B illustrate these manufacturer emblems.

Unit Emblems and Mottos

As tensions mounted and the threat of Nazi invasion loomed larger, two of the Dutch fighter units adopted squadron emblems. However, these emblems were never officially approved and, in fact, were prohibited by the ML high command. Given the tensions of the times and the need for strong team spirit within the units, the command soon grew more tolerant of these markings.

For the personnel of *1.Ja VA* (see SAFO #110) it meant illustrating their mottos: "Go For It, White Mice! Pointed Shoes: Joy in Life!" The Fokker D.21's of *l.JaVA* had three running (or springing) mice on the cowling (Figure 4A) and on the fuselage beneath the cockpit was the image of a pair of shoes with up-curled pointed toes (Figure 4B). The idea for these is reported to have come from Sgt Willem Hateboer. The three "springing" mice represented the three-ship patrol formations in which the small D.21s were launched to deal with their much larger Luftwaffe foes, and the "shoes with points" was a traditional wish for good luck.

The marking on the noses of *3.JaVA* Fokker G-ls was designed by 2Lt M.S. Kreft. It was an image of a duck-with a knot tied in its neck-running on an arrow. (Figure 5) The duck had a large mouth and was fast (as an arrow!) but was hampered by the knot in its neck. It is said that the knot was a symbol for the handicap felt by the *3.Ja V A* during the mobilization period when they were often scrambled too late to reach their intended targets. However, to the pilots it represented the fact that the new G.l fighter was so fast that "that the knot was necessary to keep the animal in control, otherwise it would fly too fast!"

As in air arms worldwide, these emblems soon encouraged much camaraderie within, as well as rivalry between,-the units. For example, whenever *3.Ja VA* pilots met, they would greet each other with a "quacking" sound! On the other hand, if one asked the D.21 pilots the meaning of the symbol, they would say "the knot [in the throat] was necessary because the people of 3rd JaVA were quacking [bragging] too much."

After the War

The fall of the Netherlands did not end the use of the orange triangle as a symbol of Dutch air forces. It was used on a few Dutch aircraft stationed in the Caribbean Antilles and by Dutch East Indies aircraft (army and naval) until March 1st 1942 when the symbol was replaced by the Dutch national flag. Additionally, it was carried on expatriate Dutch naval aircraft-such as the T.8W torpedo bombers used to form the Coastal Command's 320 (Dutch) Squadron-in smaller size alongside the RAF roundels on the fuselage and wing undersides. Once these aircraft were replaced by more modem types and further RAF squadrons were formed with Dutch personnel, a small orange triangle was commonly displayed beneath the cockpit windows.

Following the Liberation of Holland by the Allies in 1945, the Royal Netherlands Air Force (RNLAF) was established primarily by the transfer of Dutch Squadrons of the RAF from their exile/host nation back to their home country. The Dutch squadrons retained their RAF squadron numbers, emblems, and heritage and the RNLAF built upon these as it expanded during the post-war and Cold War years. Because of this, there is very little in the modern-day RNLAF which harkens back to the halcyon days of the peace-time LVA or the tense, chaotic, and tragic *Meidagen* when the ML fought desperately and defiantly against an overwhelming foe.

Since WW2 the Dutch have returned to their traditional national markings of the trisected red-white-and-blue disk with its orange center dot and continue to be one of the most involved air forces in NATO, supporting "out of region" efforts-both in combat and in peace-keeping-with style and strength.

A Final Word

In modeling one of the *Meidagen* aircraft it's important to check several photos, drawings and profiles for personal interpretation of colors or sizes and position of markings. In doing so you accurately depict the aircraft of one of these brave and dauntless aviators, and in doing so, honor their courage and sacrifice.

Sources

1. *Camouflage en Kentekens* ("Camouflage and Markings"), by J. H. N. Greuter, Bergen, NL: B. V. Bonneville, 1997, pages 17, 92, 219-221, 226, Translated by Frans Scheve, 9 May 2004

2. *Fokker D-XXI: Dutch & Danish Service*, by Warren Eberspacher, St Paul, Minnesota: Phalanx Publishing Co., Ltd., 1994, page 41.

3. *Nederlandse Luchtvaart Encvclopedie. No.12 Fokker G-1* ("Netherlands Aviation Encyclopedia, No.12 Fokker G.1 "), by Hugo Hooftman, Bennekom, NL: Cockpit Uitgeverij, 1981, page 79. Translated by Frans Scheve, 9 May 2004

National Markings

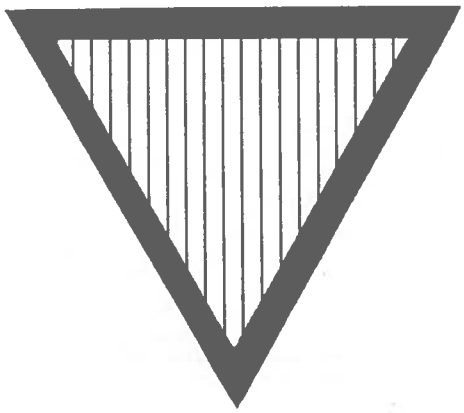


Figure 1

Aircraft Serial Numbers

1234567890

Figure 2A

1234567890

2512

Figure 2B

Manufacturers Information

Fokker DXXI

MERCURY VII

Figure 3A

Fokker G1

MERCURY VIII

Figure 3B

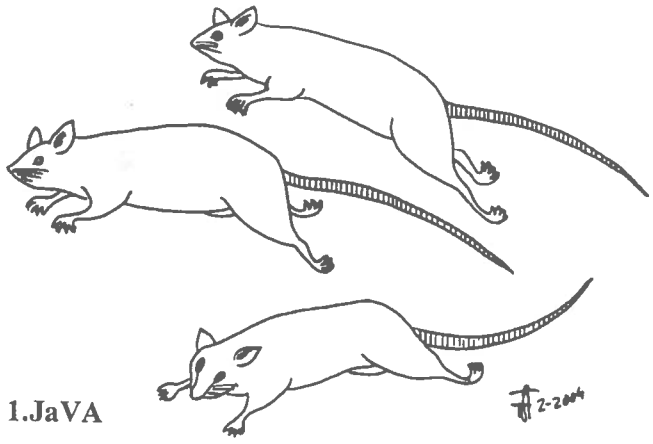


Figure 4A



Figure 4B

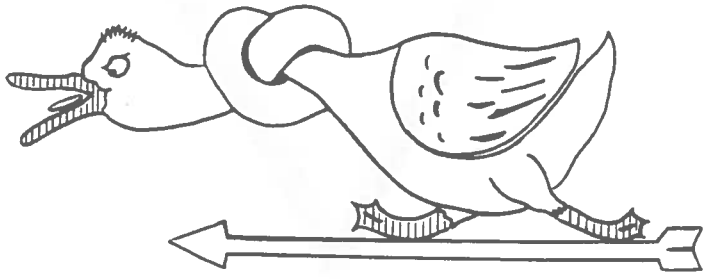


Figure 5 2-2004

Editor's Note: Full-color drawings of these squadron emblems are available on the SAFO Website (www.bartoli.com/safo).

"Red" Italian Pilot

Mikhail Zhirohov

It is well known that during the civil war in Spain, Italy supported the Nationalist side of General Franco. But little is known about the Italian flyers that fought for the Republic. This article is about the most famous of these.

Josif Krizai was born in Capriva del Carso in Gorizia Province, on 13 March 1911. At the time of his birth, this area was part of the Austro-Hungarian Empire. He became an Italian citizen after the First World War, when the region was annexed by Italy. He, along with others in the annexed region, continued trying to maintain their Slavic heritage.

Following publication of Regulation Number 470 of 21 October 1929, Krizai presented his application to enter a course for Non-Commissioned Under-Officers in the Regia Aeronautica. With the approval of his application, he entered as a volunteer in the Regia Aeronautica on 4 December 1929. He then began Military flying and theory instruction at Capua Specialist School, Campania, in Southern Italy. This was part the 3rd Military Air District. He graduated from there on 11 March 1930, placing 139th in a class of 339. On 15 March 1930, he was transferred to the 2nd Compagnia of the Breda Civil Flying School at Sesto San Giovanni, near Milan. Here he obtained his civil aircraft pilots license on 12 July 1930, and was promoted to the rank of "Primo Aviere" (First Airman).

On 30 July, he was posted to the 2nd Fighter Training School, at Ghedi air base near Brescia, where he trained on Ansaldo AC 2 and AC 3 fighters. He was again transferred on 12 August 1930 to the Fighter Command School at La Furbara in Lazio central Italy, and here flying the Fiat CR 20 fighter, obtained his Military Pilots License on 19 September. His evaluation report gave him good grades. Total flying time to that point was 170 hours.

On 29 September he was assigned to the 1 Stormo Caccia, 71a Squadriglia, CR 20 at Campoformido, but on 6 October was reassigned to the 3 Stormo Caccia, 70a Squadriglia, CR 20 stationed at Bresso near Milan. His evaluation reports were again very good, listing him as very interested in learning, very active, and seriously involved with assigned tasks.

On 16 September 1931, his period of military service ended, and he was issued a certificate for Honored Service and an award of 5000 Lire. According to one version, he ended his service after the minimum contractual period of 18 months, for the reason that he was not happy with military life. Another version says his service contract was not renewed by the Regia Aeronautica because of suspicions about his feeling towards Slavic nationalism.

He moved to Aisdussina to live with his sister Maria and tried to find employment as a civil pilot, submitting requests to various air firms and glider schools, but with no results. Meanwhile, his feelings towards Socialism and against Italian Fascism were growing. Therefore, he decided to leave Italy. He borrowed a light sporting Fiat AS 1 aircraft from the Aero Club "Giacomo D'Odorico" in Friuli, where ex-Regia Aeronautica pilots were permitted to fly to maintain the validity of their licenses. On a training flight on 25 June 1932, he crossed the border, landing at Siska near Ljubljana in Yugoslavia, where another of his sisters lived. Here he asked the authorities for political asylum. Owing to some suspicions about him, (he had originally said he had made a navigation error) he was arrested and interrogated, especially about the Italian Air Force. He was then transferred by the police to Lesnica in southern Serbia and put under house arrest. The Fiat was returned to Italy, where in Udine a tribunal condemned Krizai for embezzlement. After some six weeks at Lesnica, the Police transferred him to Biolina. Unable to find a job due in part to his inability to speak Serbian, he worked for food at the Municipal Hospital. In the autumn of 1933, he was allowed to return to Ljubljana to live with his sister. Here he was finally able to secure a job and obtain citizenship.

In August 1935, to prove his new nationality and his military abilities, he entered military service as a pilot in the Yugoslavian Air Force. He was assigned to Belgrade Airport, and obtained his certificate on the Potez 25 aircraft. During this same period, he offered his services as a military intelligence agent, due to his past service in the Regia Aeronautica. Here he was rejected. So back in Ljubljana, he once again found himself without a regular job. In August 1936, he saw in a newspaper, that Spanish Republic was looking for military pilots to fight against the rebels.

With his offer to be an agent now accepted and under a secret charge of the Yugoslavian Air Force General Staff as an unofficial military observer, the Ljubljana Police gave him a passport. During the third week of August, after crossing the French border, he arrived in Paris and tried to contact the Spanish Republican Ambassador, but was unable to do so. He then met with the Italian Socialist leader Mario Tonelli who lived in Paris. Tonelli prepared a presentation letter for him on 25 August and sent him to the Air Personnel Recruitment Center of the Spanish Republic in Paris. This was situated on the Boulevard Pasteur. Here he presented himself as a fighter pilot of Yugoslavian nationality. Krizai was signed to a three-month renewable contract, with a pay of 3000 French Francs per month and a life insurance policy for 200,000 Italian Lire. For communications, he listed the address of the Italian Socialist Party in Paris at Fauborg Saint-Denis 103.

On 27 August, after receiving an advance of 1000 FF, he traveled by train to Tolouse and from the airport there he flew to Madrid-Barajas via Barcelona on a Spanish LAPE (Lineas Aereas Postales Espanoles) aircraft. At Madrid-Barajas airport, he joined the "Escuadra Espana", an international squadron under the command of the French writer Andre Malraux. This group flew Potez 540 bombers plus Neiuport 52 and Dewoitine D 371/372 fighters, with the fighters led by French Captain Abel Guidez. Krizai was assigned fly a Neiuport 52 as escort for the bombers. His first missions were flown over Siguenza, Toledo and Talavera de la Reina.

As with the other members of the International Squadron, he was barracked in Madrid at the Hotel Gran Via, but soon they moved to the less expensive Hotel Florida.

From mid September 1936, he was also flying the twin-engined French Potez 540 bomber of the "Esquadra Espana". A crew had been formed with four other Italian airmen, including the bombardier Giordano Viezzoli and gunner Cesare Roda. On one of his first bombing missions, despite orders to attack enemy positions at Talavera de la Reina, in an agreement with the other crew members, Krizai bombed the Alcazar de Toledo, which at the time was under siege by Republican forces.

In late September while again flying fighters, his Neiuport 52 was attacked and badly damaged by two Heinkel He 51s. Although his aircraft received many hits, two of which caused large rips in the fabric, Krizai was uninjured, and was able to escape into the clouds and safely land at the Madrid-Getafe airfield.

During this period Krizai gained a sort of "ace" fame among his comrades when he claimed three individual air combat victories on the central front. For these victories he received rewards of 15,000 Pesetas each. Some later historians say these victories are difficult to verify, but this is true of a lot of claims during the Civil War, which were between 2 and 3 times the real numbers.

At the beginning of October 1936 he began flying the more modern Dewoitine D 371 fighter on the Madrid-Toledo front. On 14 October, in air combat over Santa Cruz de Ratamar, a Fiat CR 32 of the "Aviacion del Tercio" flown by the Italian pilot Giovanni Magistrini shot down his D 371. Strangely, Krizai and Magistrini had been friends during training with the Regia Aeronautica. There were other ex-friends also flying with the "Aviacion del Tercio". Krizai's D 371 had been hit in the fuel tank and began to fall in flames. Despite being wounded in the foot and face and his hands burnt, he was able to bailout. The wind blew his chute into Nationalist territory, where after landing he remained undiscovered for a day while attempting to get back to Republican lines. Finally, being very weak from the loss of blood and in pain from his wounds, he gave himself up.

While recovering at the Hospital in Talavera de la Reina, Krizai was interrogated by the Commander of the "Aviacion del Tercio", Ruggero Bonomi. Krizai spoke of his prior service in the Regia Aeronautica, and expressed his hope to be accepted again in Italy in the future. After his recuperation, he was moved to a prison in Salamanca, where Intelligence Officers from the Italian "Corpo Truppe Volontarie" or CTV, which had just begun to arrive in Spain, extensively interrogated him.

Meanwhile in November 1936, the press in Paris and Belgrade had published false reports about Krizai's capture, saying that he had been shot by a Rebel firing squad, and even that he had been tortured before being killed. But in truth, he had not been harmed, and was included in an exchange of captured pilots which had been arranged between the two sides, by the International Red Cross. He was released on 20 July 1937, crossing a bridge into France at Hendaye.

From Paris he returned to Yugoslavia and stayed with his sister in the town of Ptuji for about two months. In October he again returned to Paris where after two weeks he crossed the Spanish border to join the Republican Air Force for a second time. He was assigned as a fighter pilot to Grupo 71, for coastal defense of the Valencia area. He was not been posted to a front line escuadrilla, because one of the conditions of exchange excluded returning to fight in Spain. Had he been captured a second time, he very well might have been condemned to death. Whereas, flying in coastal defense made the possibility of recapture very slight. Near the end of October, Krizai was appointed as commander of the 1a Escuadrilla of Grupo 71. This unit initially operated in defense of the Cartagena area, and was mainly equipped with Dewoitine 37 fighters. Krizai's aircraft was a D 371 with the code 13 (ex-French military code R-913). He remained with this escuadrilla until April 1938, when he finally left Spain.

He returned to Yugoslavia and lived with his sister until September 1938 when he moved to Zemun in Serbia. There he got a job with the local aeronautical factory. In 1939, Krizai was a flying instructor at the Belgrade Aero Club "Polanka", where he taught a female pupil whom he later married.

When the Germans and Italians invaded Yugoslavia in 1941, Krizai chose not to join the Partisan resistance owing to continued debilitation from wounds incurred in Spain. Later in 1944 after the liberation of Belgrade, the USSR gave new aircraft to the reactivated Yugoslavian Air Force. Krizai went back into the service, flying in action during the final months of the Second World War. During this time he flew both the Yak-3 fighter and the Ilyushin Il-2 ground attack aircraft. He also became the first allied pilot to land in Ajdovshina (Aisdussina in Italian) on 9 June 1945 where the local population welcomed him.

With the war now ended, Krizai made the decision to remain in the military, and rose to the rank of Captain. He died in 1948 in a flying accident. Despite the fact that his aircraft did not have the proper instrumentation, he had received orders to take off with his Yak 3 from Ljubljana airfield in bad weather,. Shortly after take off, his aircraft crashed into the side of a 5900-foot mountain near Ilirska Bistrika.

Later a monument was erected to his memory at Szenik, in Slovenia, near where he fell.

I thank Mr. Alfredo Logoluso (Italy) for supplying additional information.

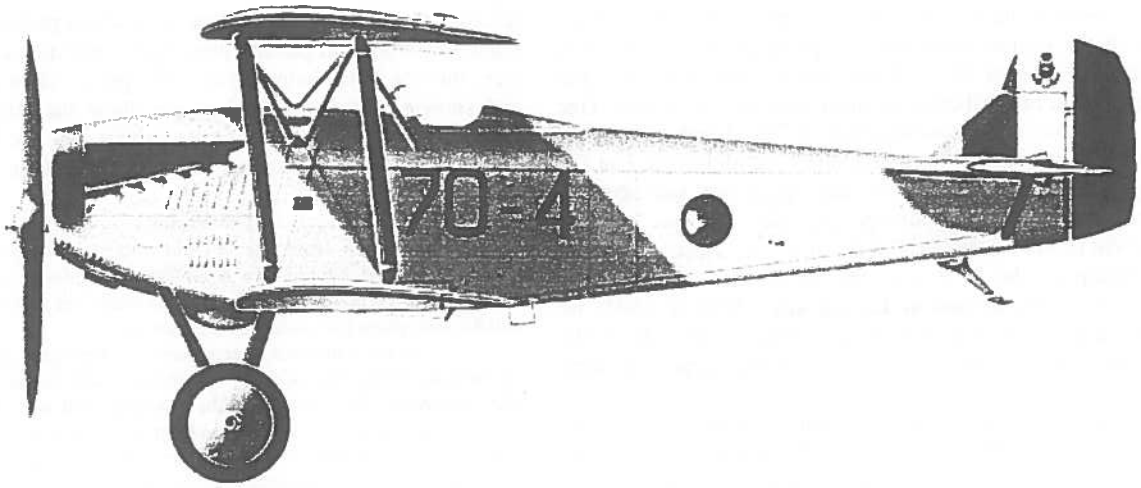
This article was submitted on the behalf of the author, Mikhail Zhirohov, by Paul Whelan (SAFCH 553), 97 James St., Bloomfield, NJ 07003, USA.

Captions for photos on page 2. (All photos via the author.)

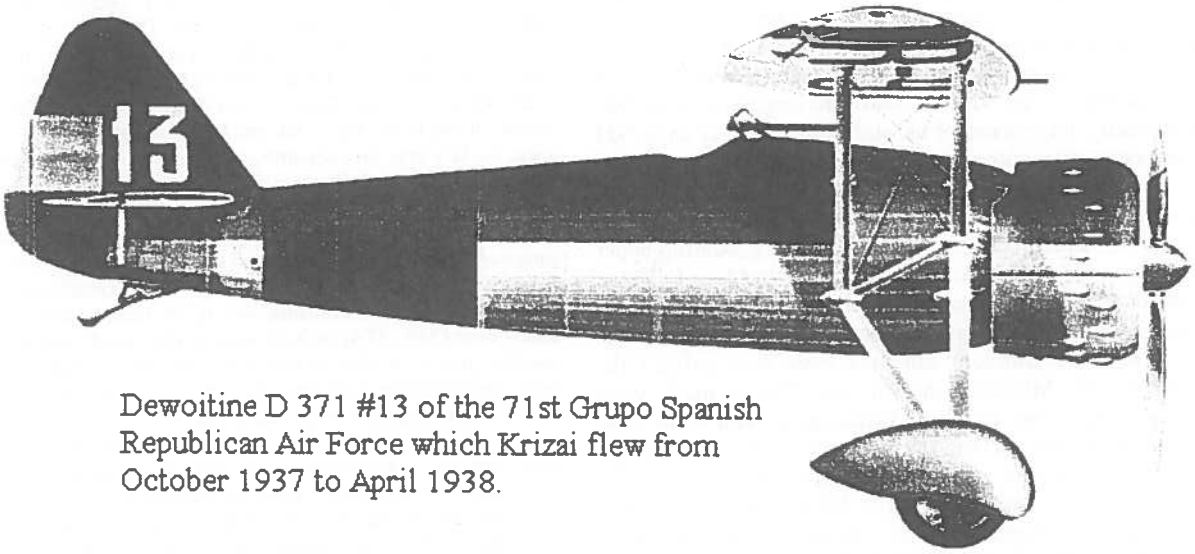
1. Josip Krizai in his Fiat CR.20 `70-4' of 70th Squadriglia, 3rd Stromo Caccia., Brecco, Italy, 1931.
2. Dewoitine D.371 `13' of the 71st Grupo Spanish Republican Air Force flown by Krizai October 1937 to April 1938.
3. Krizai (right) and friend photographed on his D.371 `13'. Valencia, Spain.
4. Krizai's Yak-3 white `25' of the 112th Fighter Regiment, 111th Fighter Division, Yugoslav Air Force. Spring, 1945.

Potez 540 a type flown by Krizai in September 1936

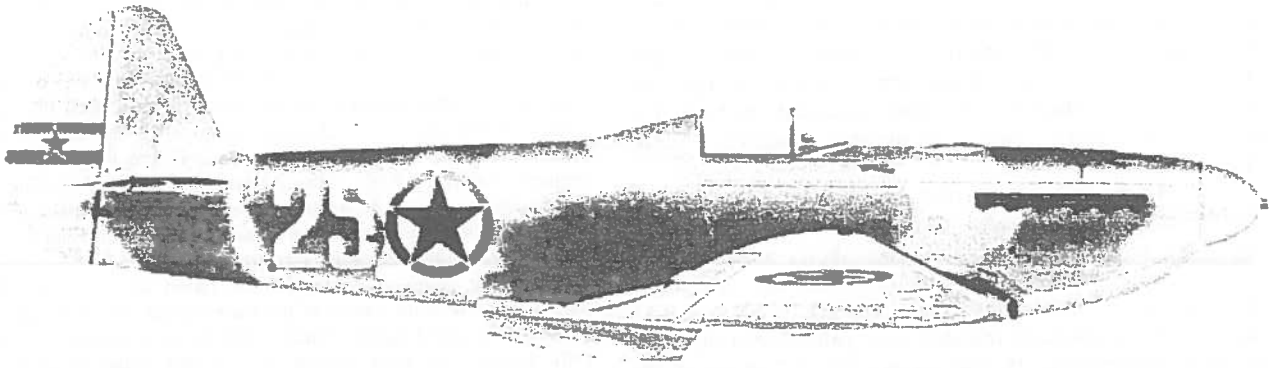




Fiat C. R. 20 of the 70th Squadriglia de Caccia, type Krizai flew.



Dewoitine D 371 #13 of the 71st Grupo Spanish Republican Air Force which Krizai flew from October 1937 to April 1938.



Yak 3 of the 254th IAP Yugoslavian Air Force, flown by Krizai

Editor's Note: These drawings were provided in full color and the reproduction here does not do them justice. Go to the SAFO Website (www.bartoli.com/safo) to see them in full color.

The Hellenic Savoia-Marchetti S 79

Stamatis Andreou

Several Italian aircraft were captured by the Hellenic Army of the Epirus when, after stopping the Italian invasion launched on October 28, 1940, the Greeks counter attacked and advanced well into Albanian territory only six weeks later. One such prize was a Savoia-Marchetti S.79M bomber that had been abandoned at Koritsa (Korce) after colliding with Fiat CR 42 fighters while attempting to take off. It was subsequently repaired and taken on strength by *the Elliniki Vassiliki Aeroporia* (EVA = Hellenic Royal Air Force). Apparently used as a transport, the S.79 was one of the aircraft eventually destroyed on the ground at Larissa after April 6, 1941, by German fighters or bombers. Regrettably, all records of the missions flown by the S.79 in EVA service appear to have been lost.

When captured, the S.79 wore the code 254-7 (serial not recorded) identifying it as No.7 of Squadriglia 254a, a 105° Gruppo Autonomo BT unit based at Tirana and forming part of Commando Aeronautica Albania. The twin windows on each side of the "hump" next to the dorsal gunner's position and the configuration of this latter show the machine was an S.79M. The three engines were 750 hp Alfa Romeo AR 126 RC 34 nine-cylinder radials. Heavy exhaust stains forming a wide line from the leading to the trailing edge of the starboard wing inboard of the nacelle show that a short, "horn" type exhaust stub was fitted on the inboard side of the starboard engine. This would seem to indicate that 254-7 was either an early S.79M or that it had been fitted with the starboard engine of an S.79K. (Theoretically, the exhaust of the starboard engine of an S.79M was always on the outboard side.) The armament, comprising three 12.7 mm and two 7.7 mm Breda-Safat machine guns, had been removed before the aircraft was abandoned.

Two available photos of 254-7 show it wearing upper surface camouflage consisting of wide bands of Verde Mimetico and Marrone Mimetico separated by narrow bands of Giallo Mimetico, the colors blending into one another at the edges. The under surfaces can only have been painted the standard Grigio Mimetico then in use. The spinners were white. The characters `254' were black, the hyphen in the code was half black half red, and the `7' was red. This camouflage scheme is very similar to that illustrated in Dimensione Cielo no.4, Bombardieri, for the S.79 /A.R. 126 coded 252-3 of 252a Squadriglia, 104 Gruppo, 46 Stormo based at Scutari (Shkodra) in December 1940, the colors shown being a dark green, dark red brown and yellow ochre. The S.79s of 46 Storm BT also wore this scheme in 1940, as is apparent from a photo of one of 255a Squadriglia, 105 Gruppo over Malta's Valetta Grand Harbor. Like 254-7, they did not have the white fuselage band shown for 252-3 which was only introduced early in 1941. The interior of 254-7 was presumably painted Verde Anticorrosione.

When 254-7 was first taken into EVA service, blue/white/blue roundels were painted over the Italian insignia under the wings. No available photo shows whether EVA roundels were painted on top of the wings, but this seems likely in view of the obvious danger of attack by EVA or RAF fighters. On the fuselage, roundels were painted over the code, not quite obliterating `25' and leaving the `4-7' intact on the starboard side. On the port side the reverse was presumably the case. The small *fascio* on each side of the cowling of the central engine were also left intact. There were three very dark, new patches of paint on the fuselage above the aft end of the starboard wing root. Also on the starboard side of the fuselage, scattered above, between and below the code, there were at least seven small, square, pale patches which probably covered bullet holes. Similar patches must have been visible on the port side, but not in the same places. The photo taken in the open and showing these details does not show the tail. A second photo taken in a hangar seems to show that the fascio, and probably the other remnants of Italian markings, were later obliterated.

The Model

In 1/72nd scale, the obvious choice is the new Italeri kit while the best reference is the re-edited, 2000 edition of Ali d'Italia No.9, SIAI S.79 pt 1. Comparison of the major kit parts with the Ali d'Italia scale plans indicates they are spot-on.

The kit comprises three sprues, two light grey and one clear, all the parts being free of flash and the few sink marks well hidden after assembly. The instruction sheet is clear and well laid out, but note the emphasis is on the torpedo bomber version of the S.79 and a few parts are superfluous to requirements for a model of 254-7. Part of the decal sheet by Cartograph can be used.

So far as the parts are concerned, there is nice sidewall detail in the fuselage halves (1A, 2A) from cockpit to tail, but there are no rudder pedals on the cockpit floor (3A) and the "bottle" on the bulkhead (18A) should be just behind the pilot s seat. The control columns in the real machine were anodized metal (metallic blue), not black as shown, and the seat cushions were of leather. The square seats for the flight engineer and the R/T operator between the bulkheads (18A and 30B) are not provided. The inside of the gondola, the bomb aimer's "office", is bare, but perhaps an after-market supplier will provide a Jozza bomb sight and the "typewriter" type bomb release controls. There is good detail on the top (25B) and the bottom of the bomb bay (1B), but the front, port side and back are open, so there may be a see-through effect when the model is viewed from certain angles. In the real machine, the bomb bay was an open box with only its acme visible on the port side. The bomb bay occupied two-thirds of the width of the fuselage leaving a narrow gangway for crew members to move fore and aft. The floor of this gangway is well represented by Part 3A. The retractable cover of the dorsal gun position is available only in the open position. The open access door (36A, 37A) with its steps is very good. And the 7.7-mm machine gun on its slide mounting between the fuselage side ports is more than welcome. Note that the generator (21B) on the starboard side of the fuselage was often bare metal.

Wing detail is good, all the control surfaces are separate parts, and the aileron balances and flap activators are a nice touch. The engines (21A) are quite good but lack the two pipe-like oil cooler air intakes bracketing the top cylinder, which will have to be made from plastic tube. The exhausts are the later, longer type fitted on torpedo bombers and will have to be replaced with the short, "horn" type fitted on S.79 K/Ms. The wheel wells/doors (23A, 24A; 6, 7,8 and 9B), and various intakes, panels, etc. are well represented. All in all, a very good kit for a very reasonable price.

For modelers who would like to add more or even better detail, after-market products already listed for the Italeri kit include Eduard 72406 and 72415 photo-etched exterior and interior parts, Pavla 7240 resin interior and main canopy, and Pavla 7246 resin engines, weighted wheels, exhausts and under surface glazing. The fin-to-tailplane wires (one double and one single on each side) should not be forgotten. Also, remember to add the dorsal antenna wire and the two fuselage-to-wing wires (see artwork).

The paints recommended by Italeri are from the Model Master range with the names of the colors given only in English and not in Italian and English, which would be more helpful. However, Dark Green-1710, Dark Brown II-2111 and, Italian Sand II-2110 would appear to correspond to the mimetico colors Verde, Marrone, and Giallo. For a model of 254-7, these colors should be applied with reference to the illustrations in Dimensione Cielo no.4 and the photos, but making the bands of Giallo Mimetico somewhat wider than for 252-3. Humbrol 64 Matt Light Grey is probably best used to represent the Grigio Mimetico of the under surfaces. Alternatives to the Model Master paints would be Polly Scale PS5288 Italian Camouflage

Green, PS5286 Italian Camouflage Brown 2, either PS5292 or PS5294 Italian Camouflage Yellow 2 or 3 (whichever is darker). Humbrol unfortunately no longer offers a set of specific Regia Aeronautica camouflage colors.

EVA markings are best taken from a Plastimodellismo sheet [Available from the SAFCH Sales Service.] offering the paler blue/white/blue roundels, the two fascio and the still visible parts of the Italian code can be made up from the Italeri decal sheet. Alternately, there is a Tauro decal sheet offering codes for several S.79s.

Modelling the Hellenic Gladiator

Sid Napier

[Editor's note: This article is a follow on Sid's story of the Hellenic Gladiator that appeared in SAFO #112.]

Most photos show 33, 80 and 112 Squadron Mk Is or 80 Squadron's Mk II serialled L8011, so Mk Is of 33 and 80 Squadron were modelled. The idea of modelling a Sarpakis donated Mk I was abandoned because no PC and printer could be found to print the necessary decals using Greek letters of the right size and font.

The references primarily used were Alex Crawford's "Gloster Gladiator" (Mushroom Magazine Special No.6104) and the article "Epitome of an Era, the RAF's last fighting biplane" in Air Enthusiast of March 1973. Crawford's book offers 1/72 scale plans of the Mk I and Mk II, many photos of Gladiators of both marks and detail shots of N5628 on display at the RAF Museum in Hendon, plus 16 pages of colour profiles. The Air Enthusiast offers additional history, photos and a cutaway drawing.

So far as kits go, the Gladiator has been moderately well served by the manufacturers over the years. In 1/48 scale the obvious choice is now the Roden Gladiator Mk I, which is a new tooling and not the Toko design. An alternative would be the old Impact kit. Alex Crawford has built the two in parallel and his review of the Roden kit published in Mushroom Model Magazine 8/1 can be recommended to anyone planning to use it.

In 1/72 there is a choice of three kits. The one by Airfix is of interest primarily to collectors.

The Matchbox kit offers a cockpit devoid of all detail except a floor, an unlikely seat and a pilot figure. At a minimum, because of the long canopy, it is advisable to scratch build an instrument panel, bulkheads and "tray" behind the pilot, and add a bucket seat and a control column. The engine (Part 19) should be replaced with an Aeroclub Bristol Mercury (ABE071) with its diameter reduced so it will fit in the cowling (Parts 15, 16, 18), which has to be lengthened by inserting a 1,0mm ring of card between Part 18 and Parts 15/16. The one-piece canopy features a Mk II windshield frame, parts of which need to be removed if a Mk I is to be modelled. The rest of the kit presents no problems.

The Heller kit is the better choice. Assembly, however, presents a few problems. Both kits used came out of their boxes with warped, curved port-side cabane struts that proved difficult to straighten. The fuselage halves are not quite symmetrical, and the front fuselage top (Part 9) is not a very good fit. Cockpit detail is adequate for most modellers (instrument panel, compass, control column, seat, bulkheads, etc., but the seat appears to have been designed for a very skinny pilot. (Aeroclub ABV053 bucket seats and Extratech EX 72039 seatbelts were used.) The three parts (Nos.41, 42, 43) of the canopy are so thick that it cannot be assembled 'open', so the parts are best glued together with epoxy to facilitate sanding when the Mk II windshield is converted into that of a Mk I. If the windshield is attached to the model as provided, it leaves a gap of over 0.5mm between the bottom of the front panel and the fuselage top. On the real aircraft, the fit is flush. The gap has to be filled with scraps of card, the bottom framework sanded off the windshield, and the assembly then painted so that the filler becomes the bottom frame. (Do not attach the oil cooler, Part 29, before attaching the canopy.) The main landing gear legs are not symmetrical; Part 17 needs to be sanded to match its counterpart, both have to be attached with special care to ensure the model will not tilt to one side, and the fuselage/gear leg joints will need attention with putty and wet'n'dry. The wheels (Parts 18) lack covers, so either some must be made from thin card or wheels must be borrowed from a Matchbox kit. Care must be taken when assembling the engine and cowling (Parts 7, 8, 26, 27) to ensure the two plug holes in the back of Part 18 are vertically aligned; they are intended to fit over two studs on the join between the fuselage halves – which is not even because the halves are not quite the same length and has to be sanded flat. (Actually, lengths of rod were cemented in the holes in Part 8 and holes drilled through the studs. This made it much easier to attach the prepainted engine/cowling sub-assembly.) Lengths of plastic tube were inserted between cylinders to simulate the two air intakes. The Vokes filter was shaped from laminated card with reference to a drawing in Crawford's book, another in the Air Enthusiast and photos. Oval in plan, in 1/72 scale it is 6.0mm long, 2.5mm wide at the front and back, 4.5mm wide in the middle, and 1.5mm deep. The intake was represented with a piece of 0.125mm card appropriately scored. The filter was attached using a piece of plastic shaped in cross-section like the kit part (No.30) but longer, its end being cemented in a hole cut in the front of the fuselage. The propeller hubs required attention with putty and wet'n'dry. The 'spinner' of one propeller was filed off and replaced with an attachment plate punched from 0.125mm card and pricked from the back to simulate 10 bolt heads. The ends of the exhaust pipes (Parts 33, 34) and the muzzles of the wing guns (Parts 31) were drilled out. The upper wing was mounted by first attaching the cabane struts, then inserting the interplane struts after the former were firmly in place. The instruction sheet shows rigging thread attached by insertion under the ends of the struts as they are cemented in place. (It would be interesting to watch this being done by whoever thought of the idea.) The few holes provided in the root of the lower wing, fin, tailplanes and fuselage tail are too big and proved difficult to fill after rigging. It would be better to plug them with drawn sprue, then drill smaller holes. Additional holes (0.6mm) were drilled in the wings and the models rigged using elastic thread and epoxy. Steel wire (0.3mm) was used between the cabane struts

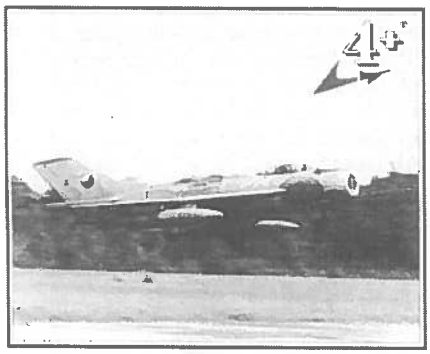
Painting: Both models were painted using Humbrol enamels: H29 Dark Brown and H30 Dark Green for the upper surfaces, H33 Matt Black and H56 Aluminium for the under surfaces. The Dark Earth on one model (ex-33 Sqn) was then painted over with H118 Matt US Tan leaving Dark Earth margins at the edges. Obliterated RAF markings were simulated using Xtracolor X115 USMC Field Green, that applied on one model (ex-80 Sqn) showing overpainted roundels, codes and tail flashes, that on the other only overpainted roundels and fin flashes. One propeller (ex-33 Sqn) was painted H33 Matt Black with a natural metal spinner (H27002 Polished Aluminium dulled with a thin wash of H64 Matt Light Grey –the combination also used for the natural metal of the Vokes filters). The propeller of the other model (ex-80 Sqn) was painted with H63 Matt Sand, then given a thin wash of a mix of H24 Trainer Yellow and H60 Matt Scarlet to simulate varnished wood. The result looked too new, so a further wash of Xtracolor X219 RLM 61 Dunkelbraun was added. The face plate was painted H53 Gun Metal. The bronze of the collector ring and exhausts was simulated with a mix of H29 and H12 Copper finished with a thin wash of H33 Matt Black.

Decaling: Faded blue EVA roundels from an unidentifiable sheet were used for both models. The diameters of those for the fuselage and lower wings were determined with reference to the Heller decal sheet and by availability. Thus those on the lower wing of one modeller are 13.0mm in diameter, those on the other 12.0mm. The fuselage roundels are 9.0mm in diameter, i.e., slightly larger than the red/white/blue of the A.1 roundel on the Heller decal sheet. Given that a photo of L8011 reportedly shows EVA upper wing roundels about the size of the red centre of the RAF 'B' roundel, non-modellers were shown the Heller decals with 6.0mm red centres and EVA roundels measuring 6.0mm and more in diameter. All reacted by saying the 6.0mm EVA roundels were too small. EVA roundels 8.0mm and 10.0mm were therefore used. The serials K7973 (80 Sqn) and K8018 (33 Sqn) were made up using parts of the serials on Heller and Matchbox decal sheets, plus others from a friend's spares box. A coat of flat clear varnish was then applied.

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MiG-19: Day Interceptors & Two-seat variants; MiG-19, S, SV, S-105; Shenyang J-5/F-6, JZ-6, JJ-6/FT-6, J-6I, II & III, by Ivo Pavlovaky, Michal Ovcacik, and Karel Susa. Soft Cover. (2003) 4+ Publications #17. ISBN 80-900708-8-4. .Mark I Ltd., PO Box 10, CZ-100 31 Prague 10 – Strasnice, Czech Republic. E-mail: mark1@cmail.cz. (£9.90 / $18.00).

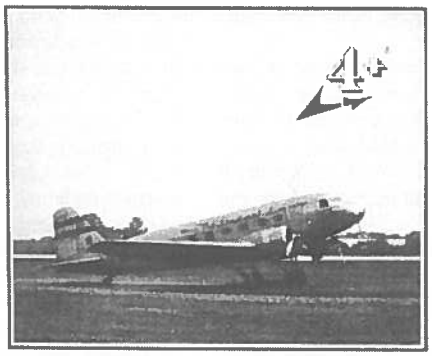
The 4+ publication on the MiG-19 is in their familiar format – a history of the development of the aircraft and its variants and a technical description of the main variant; is complimented by a multitude of well-chosen b&w and color photos of the aircraft and of exterior and interior details, excellent side-view drawings, and outstanding multi-view scale drawings.

This volume covers the day fighter versions (a second volume on the radar-equipped versions will be "published soon"). The 1/72 scale drawings occupy two pages plus both sides of a "fold-out page" equivalent to a total of 6 pages. In addition, there is a page of 1/72-scale drawings of the various under-wing stores carried by the MiG-19. Variants presented are the MiG-19, MiG-19S, MiG-19SV, Shenyang J-6/F-6, and Shenyang JJ-6/JT-6. The latter is particular interesting since these drawings will allow the modeler to convert the KP kit of the MiG-19 into a 2-seat version. The six side view drawings consist of Chinese Shenyang J-6, JZ-6, J-6III, and JJ-6 (2 seater); Egyptian F-6C (port, starboard and top view of camouflaged a/c); Pakistani F-6C and F-6 (the latter with port, starboard and top view of camouflaged a/c); Albanian F-6; North Vietnam F-6; and Bangladesh FT-6 (2 seater).

The b&w photo coverage consists of 35 photos of the aircraft (14 Soviet, 13 Czechoslovak, 2 East German, 2 Pakiatani, one Albanian, one Egyptian, and 2 Chinese) and 77 of interior and exterior details. The color photo coverage consists of 14 photos of aircraft (4 Soviet, 3 Czechoslovak, 3 Pakistani (one a center fold with blank pages on the back so it can be removed without interrupting the text), 3 Chinese, and one Egyptian) and 13 of exterior and interior details.

The 4+ Publications' MiG-19 is recommended to anyone interested in Soviet aircraft. It is a must for anyone contemplating building a model of the MiG-19, particularly if they want to add one of the Chinese-built versions in Pakistani or Bangladesh markings to their collection.

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1/72 scale planes

Douglas DC-2, DC-1, DC-2, DC-2K, R2D-1, C-32, C-32A, C-33, C-34, C-38, C-39, C-42 in civil and military service, by Stan Dudek, Michal Ovcacik, and Karel Susa. Soft Cover. (2004) 4+ Publications #18. ISBN 80-902559-8-1. Mark I Ltd., POE Box 10, 100 31 Prague 10 – Strasnice, Czech Republic. E-mail: mark1@cmail.cz. (£22.80 / $39.00).

This book represents a significant change in presentation for 4+ Publications. Not only is it much larger (84 pages), but the emphasis is more on the operational history and less on the engineering minutia – a change this reviewer, for one, applauds. Fortunately, all of the things that make 4+ Publications excellent have been retained: the text remains entirely in English, the photos are many and well reproduced, and the scale drawings provide details of all the variants.

The text starts with the developmental history of the DC-2 in four pages including 4 photos. The next 40 pages cover the civil and military users with the length of each section depending on the importance of the DC-2. The countries covered are: DC-2 in civil use by TWA and other US airlines - 10 photos; Argentina; Australia - 3 photos and a side-view drawing; Austria - one photo; Brazil - one photo; Canada; China - one photo & a side-view drawing; Colombia; Czechoslovakia - 4 photos; Finland - 4 photos & a side-view drawing; France - one photo; Germany - 2 photos & a side-view drawing; Guatemala; India - one photo; Italy - one photo; Japan - a side-view drawing; Mexico - one photo; The Netherlands and The Netherlands East Indies - 9 photos and a map; Poland - 2 photos & a side-view drawing; Romania - one photo; South Africa = one photo; Soviet Union - 2 photos & 2 side-view drawings; Spain - 3 photos; Sweden; Switzerland - 2 photo; United Kingdom - 2 photos; Uruguay; Venezuela; and US Military Service - 9 photos & 2 side-view drawings.

The next 6 pages cover "Technical description of the Douglas DC-1 &Dc-2" and "Colours and markings". The section on "Camouflage profiles" Consists of 8 pages of color side-view drawings supported where appropriate by color top and bottom views [US airliners (8), Canadian airliners (2), Austria, Czechoslovakia (2), Germany, Dutch, Finland (2), Spain (4), Swiss (3), UK (5), and US (4)].

"Photographic sections" 10 pages with 53 photos, mostly of details. "Appendix 1: Production list" 9 pages including initial and all subsequent users and ultimate fate. "Appendix 2: Cross-reference tie-ups of registrations and construction numbers" 3 pages. "Appendix 3: List of abbreviations and acronyms" one page. Finally there is an inserted poster of the US Army's XC-32, and a large folded sheet (equivalent to 8 pages) of 1/72-scale planes.

The 4+ Publications book on the DC-2 is the definitive work on this subject and is unlikely to be surpassed in the future. The price may seem high for a softbound book, but, as they say, you get what you pay for. There is no reason why this book should not be in the library of every small-air-force enthusiast who appreciates a well-written and profusely illustrated book about an interesting aircraft type.

4+ publication



Spad S.VII C1

world war I wings line
1/48 scale planes

Spad S.VII C1, by Martin Velek. Soft Cover. (2004) $4+Publications #19. ISBN 80-86637-00-X. Mark I Ltd., PO Box 10, 100 31 Prague 10 – Strasnice, Czech Republic. E-mail: mark1@cmail.cz. (£11.50 / $19.50).

This is another first for 4+ Publications – the first of their new "world war I wings line". And, as you might have expected from 4+, it is a superb publication. Consisting of 36 A-4 size pages of

high-quality glossy paper. The text, entirely in English, is short covering the history, technical description, armament & equipment, and colours and markings in four pages. The entire rest of the book consists of photos, scale drawings, and color profiles.

Three pages of color drawings show camouflage and markings of 3 French, 3 RFC, 2 flown by US pilots, one Italian, one Imperial Russian, one red Russian, and one Polish S.VII. Five pages of color photos (23 photos) of details of a/c preserved on museums in the US, Italy, and the Czech Republic.

The fold-out scale drawings (equivalent to 4 pages) consist of 1/48 scale drawings multi-view drawings of the basic S.VII C.1 along with scrap view of the many variation on engine and other details.

In addition, a 4-page insert cover the use of the Spad VII by the Czechoslovak Air Force. While the text is in Czech and there are only 3 photos, the color drawings are a gem. Shown are port, starboard, top (with the camouflage pattern on the top surface of the lower wing shown separately), and bottom views of a S.VII carrying the Czechoslovak flag insignia. Scrap views show the placement of the earlier Czechoslovak roundel on the wings and rudder.

Lockheed Hercules Production List 1954-2006, 23rd Edition, by Lars Olausson.

The subtitle "Production, Units, Versions, Owners, Registrations" does tell half the story. This 15 cm by 21 cm spiral-bound 160 page book tells the history of all C-130/L-100. The extensive cross-referencing makes it possible to find any Hercules from the tail code or civil registration, look up all the Hercules used by a given air force or commercial operator, find the history of a destroyed aircraft, or about any other any other thing you might want to look up. In reviews of earlier editions of this book, I've tracked the history of the Kuwaiti C-103s. However, this time I thought I'd share with you the information Lars has on the Iraqi Air Forces C-130s. [The April 2005 issue of JP-4 had photos of two Iraqi C-130: one with serial `YI-301'.] In Lar's book, under "Government Operators and Owners (past and present fleets)" I found three a/c listed for Iraq: c/n 3789, 3802, and 3903. Going to the list by c/n, I found that 3789, a C-130E, was delivered to the USAF in 1963, served with a series of identified USAF units before going to the Iraqi AF as `YI-302'. 3802, has a similar history before being delivered to the Iraqi AF in February 2005. 3903 had a similar history and is listed as serving with the Iraqi AF 23 Squadron. One can find similar information on the Hercules of any country.

The *Lockheed Hercules Production List* is a true labor of love and Lars deserves our support. He is asking for our help: He says, "There is still much information missing on the ex-US C-130As and C-103Bs in Africa and Latin America. I need to know more about the ties between LAC construction numbers and the different countries' registrations. All details are welcome. Can you help?"

This book is highly recommended, not only to lovers of the Herky Bird, but to anyone interested in seeing how a the history of an aircraft with a long production run can be captured from prosperity. One copy of the 23rd Edition is available for the SAFCH Sales Service (as well a couple of earlier editions). Copies can also be obtained directly from: Lars Olausson, Box 142, S-530 32 Satenas, Sweden. "In Europe SEK 130, DKK 110, NOK 120, £ 10.00 or € 15, cash in envelope, for one copy, postage included. Or worldwide US$22, cash, airmail included. No cheques, please: My bank charge is $26!"

I-16: The History of a Revolutionary Aircraft. Collective research by Patrick Laureau, Juan Arraez Cerd , St,phane Soulard and Gilbert Duranthie. With the participation of Mikhail Maslov, Don Antoniu, Alcalde de Mostoles and Brinsley Best. Color illustrations by Teodor Liviu Morosanu; cover art work by Stanislav Hajek. English edition translated from the French original by Brinsley Best. Edited by J. Kytka, Prague, Czech Republic. Published in 2002.

192 pages packed with color and black & white illustrations, black & white and color photographs, detail drawings of every type and usage, including the Zveno/parasite configurations. Chapters cover the aircraft from it's genesis, 36 pages on the Spanish Republican and franquista usage, Chinese Nationalist, Soviet, Finnish and even the single Romanian example. Also it's testing and usage by the Nazis and Japanese and even a color drawing based on descriptions of Mongolian I-16s. There are technical drawings and descriptions of all kinds and of the different series. Annexes cover the I-16's contemporaries, the French evaluation; its renaissance "Down Under" and a condensed biography of Nikolai Polikarpov.

I have long been fascinated by the Spanish Civil War and, in particular, the Fuerzas Aereas Republicanas Españolas, aka La Gloriosa. I have been collecting information on the I-16 Mosca for at least 40 years, and I can easily state that this book has all of the information I could possibly want! Coverage of its usage in the Spanish Civil War is comprehensive as are the accurate color profiles and 3-views of FARE, franquista and post-war Spanish aircraft. I am impressed!

SAFO readers will also enjoy the chapters, drawings and photographs concerning Chinese Kuomingtang and Finnish usage. "And now for something completely different" to quote Monty Python, the color drawings include the Luftwaffe UTI-4 2-place trainer plus the captured Japanese and Romanian examples.

The only source I am aware of is: TMA, 75 rue Claude Decaen, 75015 Paris, France Euro 30.00 plus postage and packaging to the U.S. and Oh' Can'adaaa... They accept credit cards and their fax number from the U.S. is 011 33 1 43 47 34 37. There is a link to TMA's catalog at: www.cocardes.com.

Bill Brown (SAFCH #526). E-mail: bncbrown@peoplepc.com

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Logbook, Logbook, PO Box 31, Pensacola, FL 32591-9963, USA. Four issues $16.00. E-mail: logbook@bellsoiuth.net. Web site: logbookmag.com.

Volume 6, Number 2, 2nd Quarter 2005. SAFCH-member Doug Dildy brought this magazine to my attention. Although in its sixth year of publication, I have not previously heard of it. This is a shame because it is an extremely well produced magazine consisting of 48 pages (8.5inch by 11 inch) on high-quality glossy paper and heavy high-gloss covers with color on all four sides. The photo content is extensive with all photos well reproduced in large size.

The publisher, Dave Powers describes the magazine: "LOGBOOK is a quarterly magazine covering the entire spectrum of aviation history from he beginning to just yesterday. Civil, military, and airlines - aircrew, mechanics, and enthusiasts. Do you have a story to tell? We can help you write it. If you have a flying tale to tell or simply love to read great aviation history, contact us."

Articles in the issue at hand are: "More Tales from the Flight Deck" 10 pages of reminiscences of a sailor who served on seaplane tenders and as a "yellow shirt" on the carrier flight deck. Included are 10 photos of seaplane tenders, aircraft carriers, PBYs, and carrier deck activities. "Too Many Trips to the Well" a 2-page story of a B-17 mission over Germany including 2 photos. "Set'em Up, White Mice" This is the major article in this issue. Written by SAFCH members Doug Dildy and Frans Scheve, it tells the story of Dutch 1st Fighter Squadron (1.JaVa). It consists of 13 pages including 15 photos of Fokker D.21. This article is a complement to Doug's series in SAFO in that it not only covers the combat history of the squadron but also its pre- and post-war history.

The Departments are an important part of this magazine. "Air Mail" two pages including 3 photos of USN DC-6 (one in color). "News" 2 pages including 2 photos. "Aviation Bookcase" a 2-page review of *Early Cold War Overflights 1950-1956*. "The Art of Aviation" 3 pages on the art of "Dutch Master" Thijs Postma including a beautiful full-page color illustration of a Dutch Fokker D.21 flying over wrecked Luftwaffe Ju 52s. "Museums" 4 pages on the Golden Age Air Museum at Bethel, Pennsylvania, (2 photos and list of a/c on exhibit) and the Milestones of Flight Hall at the RAF Museum including 2 photos. "The Logbook" 5 pages with two adventures "Flying the Airplane from Hell" (Vultee BT-13) and "American Secret Weapon Revealed" (Teaching Dogs to Fly Airplanes). "Preservation" 2 pages on Dutch PBY including 5 photos of `16-218' (one in color). "Gate Guards": 2 pages with 4 photos (one in color) of T-28s in Florida.

I don't know if this issue represents the usual Logbook interest in the small air forces, but even if it doesn't, you owe it to yourself to try a one-year subscription to enjoy some great "reads". This is an amazing bargain. I must learn Dave Powers' secret of producing 52 pages on glossy paper including 4 pages of color for only $4.00 a copy.

[Editor's note: SAFCH member Jens Lindell of Sweden's Daedalus Models has sent two 1/72-scale, resin-cast kits for review. These kits are of for two between-the-wars Swedish biplanes – the Jaktflak and Tummelisa. While these aircraft are little known to the average modeler, they will be great interest to the enthusiast of the small air forces. With their distinctive Scandinavian appearance and three-black-crown national insignia they will make a handsome and comment-causing addition to any model collection. A limited number of both kits are available from the SAFCH Sales Service.]

Svenska Aero/ASJA J6A/B "Jaktfalk II", 1/72-scale resin kit with decals. Daedalus Models DR72009. Hobby-Importen, Box 3131, SE600 03 Norrköping, Sweden. E-mail: hobby.importen@tele2.se. $30.00.

"Svenska Aero built the first Jaktfalk fighter prototype powered by the Armstrong Siddeley Jaguar engine as a private venture in 1929. The aircraft was bought by the Flygvapnet in the following year, given the designation J 5 .... Two modified J 6s with Bristol Jupiter engines were ordered in March 1930, followed by an order for five more in June. ... in 1935 seven J 6B were built by ASJA." This is Lennart Andersson's description of the Jaktfalk as found in his book "Svenskt Militärflyg: Propellerepoken". Similar in looks and performance to the Bristol Bulldog, the "the J 6 was a first-class fighter for its time and gave long and satisfactory service with the Flygvapnet, the last example not being retired until 1941." was the comment of John W.R. Taylor in "Combat Aircraft of the World" (1969).

The Daedalus kit consists of 31 beautifully-cast resin parts with excellent surface detail. The representation of the fabric on the wings is especially well done. Alternate horizontal tails and upper fuselage sections are provided to model either the J 6A or the J 6B. The undercarriage is provided as either wheels or skis. There are no inter-plane struts, but a section of copper wire is provided – probably to be cut to length for use as the struts. This latter comment highlights the trouble with this kit – the instruction sheet does not identifying the parts and there is no drawings explaining how these parts fit together. (I cannot identify many of the smaller parts and the construction of the beautifully-detailed Jupiter engine is a mystery to me.) What is provided are multi-view 1/72-scale drawings of both the J 6A and J 6B along with diagrams of the cockpit interior. You also get a 2-page history of the Jaktflak in both Swedish and English.

The decals sheet is by Nimbus Decals and contains national insignia (three black crowns with and without white disc), serial numbers for all Jaktfalks, one personal insignia (a yellow bird), large serial number for the fuselage and small serial numbers for the rear fuselage. The 2-page instruction sheet for the decals consists of 12 side-view drawings. These drawings include several aircraft for which deals are not provided: several aircraft carrying the yellow and blue Swedish national insignia, a Norwegian Jaktflak with spatted undercarriage, and a Jaktflak in Finnish markings.

The Daedalus kit of the Jaktfalk will make up into a fantastic model for any model collection. However, because of the lack of detailed construction information, it can be recommended only to the most experienced builder of resin biplanes.

Ö1 "Tummelisa", 1/72-scale resin kit with decals and photo-etched parts. Daedalus Models DR72010. Hobby-Importen, Box 3131, SE600 03 Norrköping, Sweden. E-mail: hobby.importen@tele2.se. $41.00.

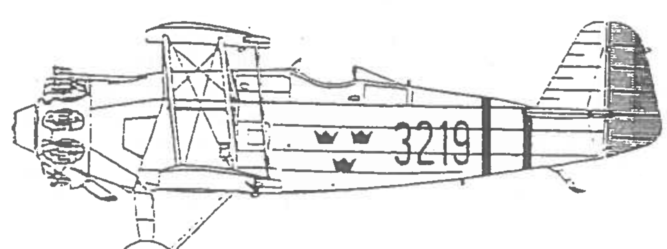
"The FVM [Flygkompaniets Tygverkstäder på Malmen] Tummeliten, or Tummrlisa, was a single-seat trainer, of which one prototype and fifteen series aircraft were built [for the Flygkompaniet (Army Aviation)]. Eleven were handed over to Flygvapnet [when it was formed] in 1926 but more were built later [24 in total]. The Flygvapnet designation Ö 1 was assigned in 1928." This is Lennart Andersson's description [with amplification by your editor] of the Tummellisa as found in his book "Svenskt Militärflyg: Propellerepoken".

The Tummelisa was a neat little single-seat biplane somewhat reminiscent of the Hanriot HD-1, but with elegantly-shaped wings. The Daedalus kit consists of 21 beautifully-cast resin parts with excellent surface detail. The representation of the fabric on the wings is especially well done. A small fret of etched-brass contains 16 parts – mostly for the cockpit and engine.

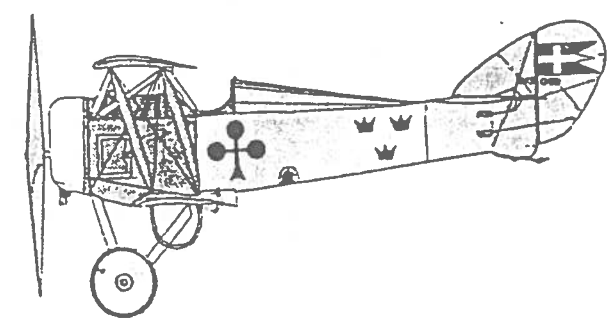
The instruction sheet consists of a layout of the resin and etched-brass parts and an exploded construction diagram. The decal sheet is by Nimbus Decals and includes all the national insignia (three black crowns with and without white disc), serial numbers for all Tummelisas in both the large size for the fuselage and in a small size for the rudder, and squadron (?) insignia (red hearts &, diamonds and black spades & clubs). Strangely missing are the Swedish flag for the rudder, but these can be obtained from other sources and some of the Temmelisas illustrated on the instruction sheet carried vertical blue-yellow rudder stripes in place of the Swedish flag. The instruction sheet that comes with the decals contains 15 side-view drawings. Unfortunately, the text is entirely in Swedish.

This kit is not for the faint hearted. However, anyone with experience in building resin biplanes should have no trouble adding a very attractive and unusual aircraft to their collection of models of Swedish aircraft.

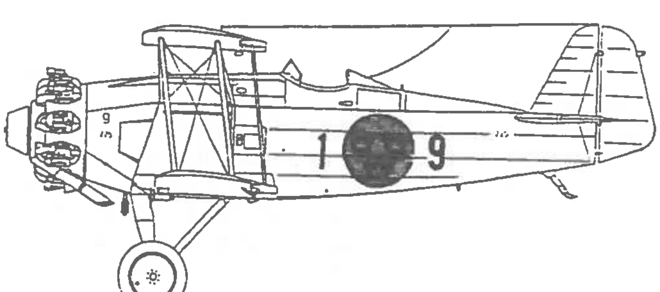
Daedalus Models

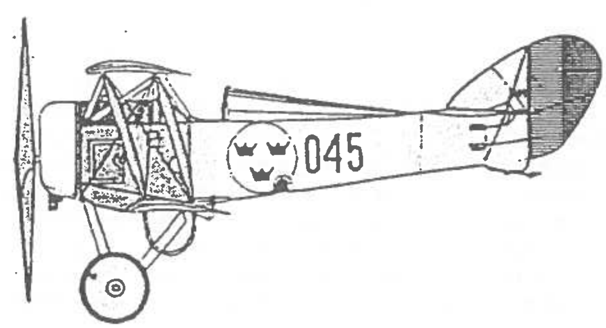


ASJA J 6A/B "Jaktfalk II"



Õ 1 "Tummelisa"





Heinkel HD 24 (Sk 4A), 1/72-scale vacuform kit with injection-molded parts and decals. Broplan MS-96. Janusz Brozak, ul Pilotow 10G/33, 80-460 Gdansk, Poland.

The Heinkel HD 24 is a not-unattractive 2-seat equal-span biplane designed in the 1920's as a elementary seaplane trainer. It served the Swedish Air Force from 1926 to 1939 as the Sk 4 (2 built by Heinkel and 4 by Svenska Aero) and Sk 4A (2 built by Svenska Aero).

Broplan's kit MS96 represents the land plane version of the Sk 4A. (A kit of the seaplane version will be released next.) This kit consists of four sheet (one 223 mm by 115 mm and two 223 mm by 58 mm) of white styrene containing the main structural components and three injection-molded sprues containing the propeller, wing and landing gear struts, wheels, and cockpit interior. The 14 vacuformed parts are sharply molded with excellent representation of the fabric on the wings (all double sided and full span) and tail surfaces. The panel lines on the fuselage are finely-engraved. The injection-molded parts are well-detailed, but there is a bit of flash to clean up. A nice touch is the molding of the wing struts with 'pips' on the end to insert into the indentation on the vacuform wings and fuselage – this should greatly simplify construction.

The instruction sheet is of the usual Broplan style: Diagrams of all the parts (essential because of the large number of parts), an exploded construction diagram, and a 1/72-scale 3-view drawing. Decals are provided for two Sk 4A: `206' and `208' of F2 Wing at Hägernäs in 1931. Both are in overall silver dope with natural metal engine cowling. The national insignia consisting of 3 black Swedish crowns on a white disc. The white discs are not provided. The decals in the review kit are disappointing since the black appears to be speckle with white. The yellow and blue rudder stripes are not provided.

The Broplan kit of Heinkel 24 is an excellent kit of a little-known biplane that will make up into an attractive addition to any collection of Swedish aircraft. It can be recommended to anyone with experience in building vacuform monoplanes who wants a simple introduction to building vacuform biplanes.

CRDA Cant Z.1007 "Asso", 1/72-scale vacuform kit with injection-molded parts and decals. Broplan MS-96. Janusz Brozak, ul Pilotow 10G/33, 80-460 Gdansk, Poland.

An injection-molded kit of the tri-motor Z.1007bis was produced by Supermodel a few years back (in both the single and twin-fin versions, if I remember correctly), so why the need for a vacuform kit of the Z.1007? The reason is that there are significant differences between the two aircraft. The following information was extracted from *Combat Aircraft of the World* by John W.R. Taylor: "... the initial production Z.1007s retained the Asso (of the prototype – an inverted V engine of 840 hp) in annular cowlings, which gave them a radial engine appearance. Before long, however, it became possible to install the more powerful 1,000 hp Piaggio ... air-cooled radial engine, in which form the aircraft became known as the Z.1007bis. ... the Z.1007bis differed from the (Z.1007) in having a 33-inch greater wingspan, 8 foot longer fuselage and a more robust undercarriage ...."

The Broplan kit of the Z.1007 consists of four vacuform sheets of white styrene (three 225 mm by 115 mm and one 225 mm by 55 mm) providing the main components, a small vacuform sheet of clear styrene for the canopies, and two sprues of injection-molded small parts. The vacuformed parts are sharply molded with finely-incised panel lines. Two wing spars are provided to insure a strong wing-to-fuselage joint and an accurate dihedral The injection-molded parts are well detailed but with a touch of flash.

The instruction sheet consists of diagrams identifying the parts, an exploded construction diagram, and drawings explaining the placement of the many interior details. These latter are most welcome since the canopy is quite large and clear. [Ed: The pilot and copilot, seated in tandem, have nice cushy seats and well-detailed instrument panels, but the poor dorsal/ventral gunner seems to have had to seat on the rear wing spar. In addition, he was provided with a panel full of instruments so he must have been expected to be the radio operator. Although I have not been able to find any information on the interior of the Z.1007, I suspect the Broplan interior is a reasonably accurate representation of the interior of the full-scale aircraft.]

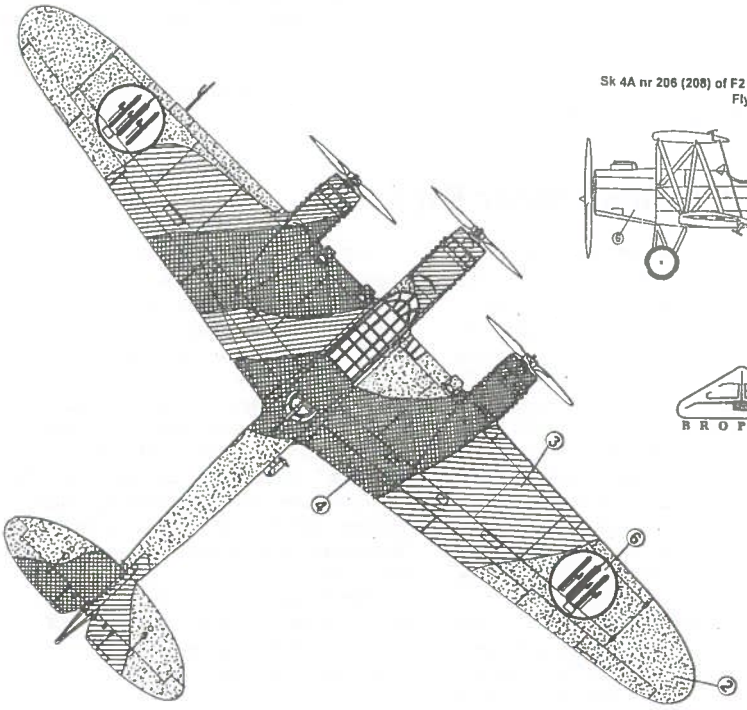
Also on the instruction sheet is a 4-view scale drawing (port, starboard, top, and front views) of aircraft `213-2' of 213 Squadrilla, 51 Gruppo 16 Strormo at Vicenca in 1940. This aircraft carries a camouflage of *Gialio Mimetico* (Yellow – FS33434), *Verde Mimetico* (Green – FS34092), and *Marrone Mimetico* (Brown – FS10076) on top with *Grigio Mimetico* (Grey – FS 36293) underneath. There are scrap-view drawings of the placement of the under-wing roundels and both sides of the cowl of the central engine.

The small (105 mm by 75 mm) decal sheet provides all the marking for `213-2' including the national insignia on the wings (black fasces on white on top surface, white fasces on black on the lower surface – the white is not provided), black `213' and red `2' codes, multi-colored House of Savoy crest for the rudder (the white cross must be supplied by the modeler), and fasces on the cowling of the central engine.

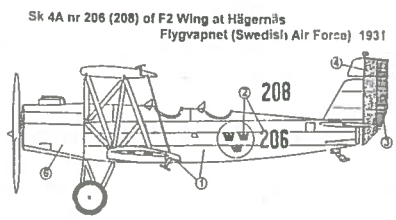
The Broplan kit of the Asso-powered Z.1007 is an excellent kit of one of the most attractive Italian tri-motor bombers. While the construction is complicated, especially the detailed interior, building this kit should not be beyond the capabilities of anyone who has built a couple of vacuforms. The finished model would look very nice next to a model of the larger more aggressive-looking Z.1007bis.

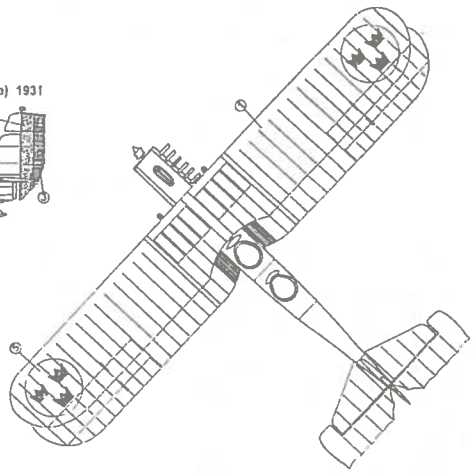
[Ed: Janusz informs me that his next releases will be the He 24 on floats, PZL P-24 A, and PZL P-24C.]

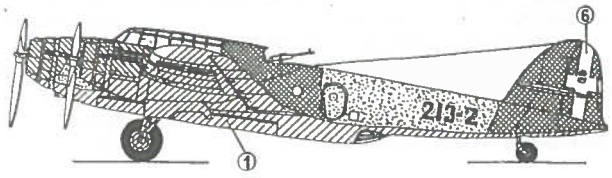
CANT Z.1007 "Asso"



Heinkel HD 24 (Sk 4A)







"In SAFO #111, R. Höfling writes that Albatros 2575/17 was built at the 'Ostfriesische Albatros Werke'. Unfortunately, there never was such an organization and it would be interesting to know what from where it got this information. OAW stood for Oxtedeutsche Albatros Werke, based in Schneidemühl, which was a subsidiary of the Albartos Werke in Johannisthal,"

Peter Grosz (SAFCH #1320).

"I received the April SAFO yesterday, as usual full of amazingly 'unknown' items.. A couple of items in the issue are a bit muddled. On page 123, Herr Hoeflig has his history of the beam . The 7 July 1937 incident was the 'Marco Polo Bridge' skirmish. How he put 'Nomenhan' (sic) there I do not know. [Ed: Mia culpa. I should have caught that one.] This of course was the battle in Eastern Mongolia from May-September 1939 involving Mongolia, Japan, Manchukuo, and USSR so quite distinct from China proper. As for spellings rendered in English, the Japanese term is Nomonhan (a Mongolian name for a local landmark) but the river is referred to by the Mongols as 'Khalkhyn-gol' and the Russian rendering is 'Khalkhin-gol.

"On page 142, the letter from M.Wawrzyski about General Rychagov needs tidying up somewhat. Pavel Vasil'evich Rychagov, sometimes c-in-c of the Soviet Army Air Forces (VVS RKKA) is referred to in a letter from R. Höfling (SAFO #112). Points of interest in his short career – a rapid rise from low rank to dramatic fall from supreme command are summarized here.

"Born near Moskva on 2 January 1911 (R. Miller in the Time-Life book says he was Ukrainian) he graduated from flying school in 1931 and held several commands. With the rank of *starshiĭ leĭtenant* he was sent from the Kiev Military District to Spain where he flew I-15s as 'Commander Pablo' from 20 October 1936 to 6 February 1937, gaining a least 8 (some say 15) victories. He then had the rank of maĭor and was made a Hero of the Soviet Union on 31 December 1936. After return to the USSR, he went to China with the rank of *kombrig*, directing Soviet and Chinese opposition to Japanese aerial attacks. Later, as commander of the VVS of the Special Far Eastern Army he oversaw air fighting against Japan in the Lake Khasan incident (July-August 1938).

"Rychagov was promoted to *komdiv* in August 1939 and in the war with Finland was c-in-c VVS 9th Army. On 6 June 1940 he became a *general-leĭtenant aviatsii* and finally commander of the VVS RKAA, replacing Yakov Smushkevich. Pavel Vasil'evich had forty meeting with I.V. Stalin between 13 March 1939 and 9 April 1941 – between the fate of Smushkevich and his own downfall. In 1942 he was for a short time on the faculty of the Academy of the General Staff, but was arrested on 24 June 1941 and shot without trial on 28 October 1941 at the settlement *(poselok)* of Barysh in Kuĭbyshev *oblast'* (since 1954 a town in Ul'yanovsk *oblast'*; its about 200 km from Kuĭbyshev and on a main railway line). With his perished his aviator wife Mariya Pavlovna Nesterenko age 24 – a squadron commander with rank of *maĭor*. He was succeeded as *nachal'nik* VVS RKAA by Pavel Fedorovich Zhigarev. Pavel Rychagov was rehabilitated on 23 July 1954."

Denys Voaden (SAFCH #1483), 8616 Edmonston Ave., College Park, MD 20740, USA. E-mail: djvokey@yahoo.com.

"In regards to Rudolf Höfling's letter about the marking on German Piper Cubs in WWII, a couple of years ago I wrote a book about liaison aircraft used during World War II. While doing research on liaison aircraft, and specifically the Piper Cub, L-4s, I ran across some photographs of German Cubs. I included in the book, two photographs of an ex-Danish Piper Cub (OY-DUP) that was seized by the German Luftwaffe in Denmark in 1940. It was coded GP+QP, werke number 1319. It was re-captured by American forces in France or Germany in late 1944 or early 1945. It was in flyable condition. It was remarked with the U S insignia and the words "Don't Shoot! USA" because it still had some German markings on it. Two photographs of this Cub are on page 28 of my book*. Since the photographs are black and white, I do not know the true colors of the markings."

* L-Birds: American Combat Liaison Aircraft of World War II, 2001, ISBN 0-911139-31-151995. [Ed. This book is available for $19.95 plus postage from Wind Canyon Books. PO Box 511, Brawley, CA 92227, USA. Web site: www.WindCanyonBooks.com. E-mail: books@windcanyon.com.

Terry Love (SAFCH #229), 9415 178th St. W, Lakeview, MN 55044, USA. E-mail: Iluvplanes@aol.com.

"Water flying is a rare and fascinating aviation activity, of huge historical significance and with a possible bright future. Como (Italy) is one of the capitals in the present world panorama of water flying. Como seaplane base is the only place in which both floatplane and flying boat flying are taught. In addition it is one of the extremely few places in the world where you can rent a floatplane and definitely the only one where you can rent a flying boat for 'solo' activity. We think your readers would be interested in a report about our existence and activities."

Cesare Baj, Vice President, Aero Club Como, Viale M. Masia 44, 22100 Como, Italy. E-mail: c.baj@corrierecomo.it.

[Editor's Note: Along with his letter, Cesare sent and copy of their Newsletter and a CD. The sample newsletter, May 2004, consists of 80 A-4 size pages of news and activities of the Club with lots of color photos on every page. The contents of the CD is: Aero Club Como newsletter no. 2; Aero Club Como newsletter no. 3; pictures; articles; ads; and video (a historical film of 1913 and a recent video of national Tv RAI Uno). Since this information is probably of interest only to pilots, the entire package is free (postage extra) to the first member who contacts the SAFCH editorial office.]

The EU Rules Have Done Something the Lufwaffe Could Not Do: Ground the "Sally B"

"This is what has happened to the "Sally B" in the UK. A new EU Insurance rule has classed the Sally B in the same category as 737's and commercial business. That means the B-17 Preservation Group has to find over $50,000 to cover the air show season. The Group has asked for all air minded military history buffs, etc to write to their MEP (Member of European Parliament) to support the Group's argument to place the "Sally B" in a lower category. This is a danger to all privately owned warbirds even here in the USA, Higher insurance costs could ground our warbirds in the USA. I thought this might be of interest to our members."

John Grier (SAFCH #1618).

"Because of health problems, Aussie Decals will close for business as of 30 June 2005. We thank you for your support." Peter Russell, Aussie Decals.

{Ed: This note was passed on to me by David Loughhead.(SAFCH #1379) who added: "Thought members may like to know of this sad loss."]

Enciclopedia de la Aviation Militar Espanola

Quirón Ediciones, C/Cromo P. 18-20, Polígono Industrial San Cristóbal, 47012 Valladolid, Spain. E-Mail: quiron@quironediciones.com. Web Site: www.quironediciones.com. Each 2.97 Euros.

#95 (Pages 1517-1532) "Bristol F.2B Fighter" (continued) 3 pages including 3 photos, a scale 3-view drawing, and a list of countries using the F.2B. "Bristol Tourer" one page including one photos. "Bristol Type 105 Bulldog Mk. II" 11 pages including 6 photos, a scale 3-view drawingt, and two color side-view drawings (one in Estonian markings). "Bristol Type 130 Bombay" one page including one photo and one color side-view drawing (both in RAF markings).

Poster inserts: "Dewoitine 510 TH (CW-002)" Avion perteneciente al Grupo 71 de la Aviacion Republicana. "Miles M-2 (CS-AAL)" Avion perteneciente al subdito portugues Sr. Revelho, al servicio de la Aviacion nacional.

#96 (Pages 1533-1548) "Bristol Type 140 y Type 160 Blenheim" 2 pages including 2 photos and one color side-view drawing (3 Mk.IV and 4 Mk. V were interned in Spain). "Bristol Type 152 Beaufort" one page including one color side-view drawing (one Mk.II was interned in Spain). "Bristol Type 156 Beaufighter" 2 pages including 2 photos amd one color side-view drawing (2 Mk.Ic, one Mk.VI, and 2 Mk.VINF were interned in Spain). "British Aircraft Eagle 2" 2 pages including 2 photos and one color side-view drawing. "British Klemm L.25C-1A Swallow" 4 pages including 5 photos and 2 color side-view drawings. "Bucker Bu.131 Jungmann" 5 pages including 11 photos and one color side-view drawing.

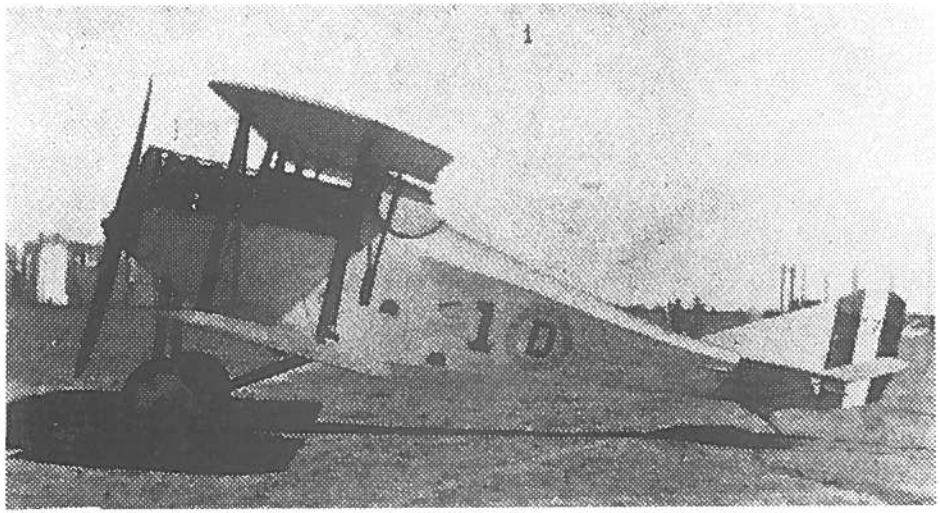
Poster inserts: "Douglas DC-2 (42-1)" Avion bautizado 'Vera de Rey', encuadrado en la Aviacion nacional. "Dornier Do 11 P (22-29)" Aparado encuadrado en la Escuadrilla A/88 de la Legion Condor.

#97 (Pages 1549-1564)."Bucker Bu.131 Jungmann" (continued) 16 pages including 27 photos (2 in color), 7 color side-view drawings, and a 2-page color 3-view drawing.

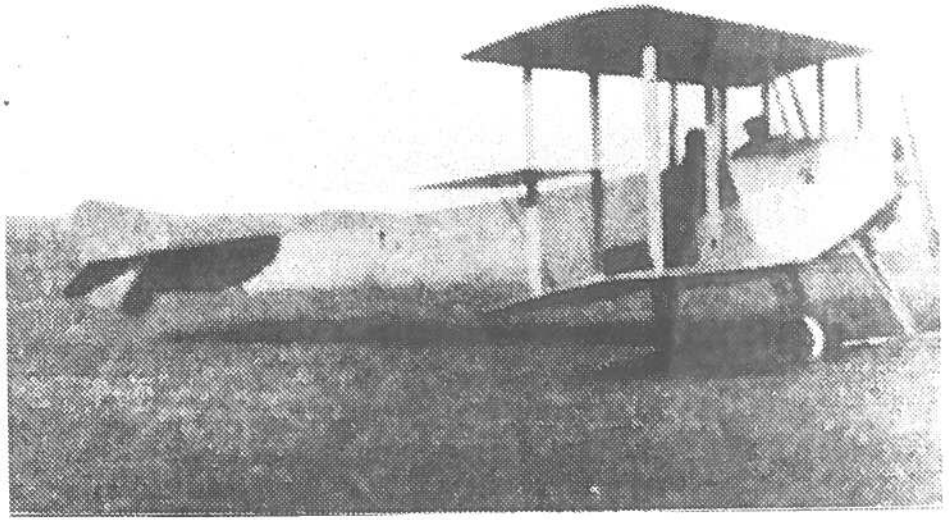
Poster inserts: "Marcel Dassault Mirage III E (C.11-9)" Aparato (111-5) perteneciente al Ala de Caza n° 11 de Manises. "Marcel Dassault Falcon 50 (T.16-1)" Avion perteneciente al 401 Escusadron.

#98 (Pages 1565-1580)."Bucker Bu.131 Jungmann" (continued) 12 pages including 10 photos, 4 color side-view drawings, scale 3-view drawing, and table of countries using the Bu131. "Bucker Bu 133 C Jungmeister" 4 pages including 6 photos and 3 color side-view drawings.

Poster inserts: "Gotha Go 145" Avion (38-13) de la Aviacion Nacional. "Dougles DC-4/C-54 (T.4-17)" Avion 352=17 perteneciente al 325 Escuadron de Transporte del Ala 35, Getafe.



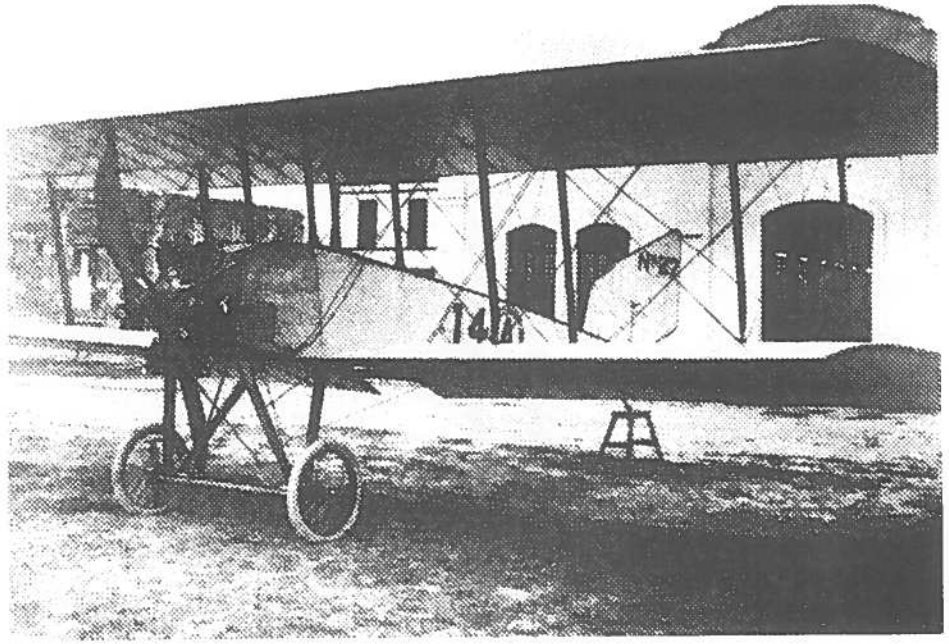
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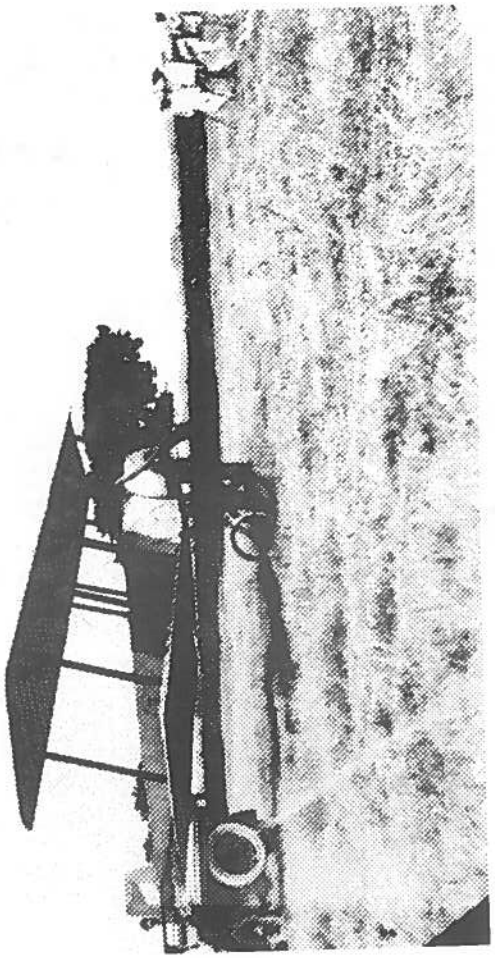
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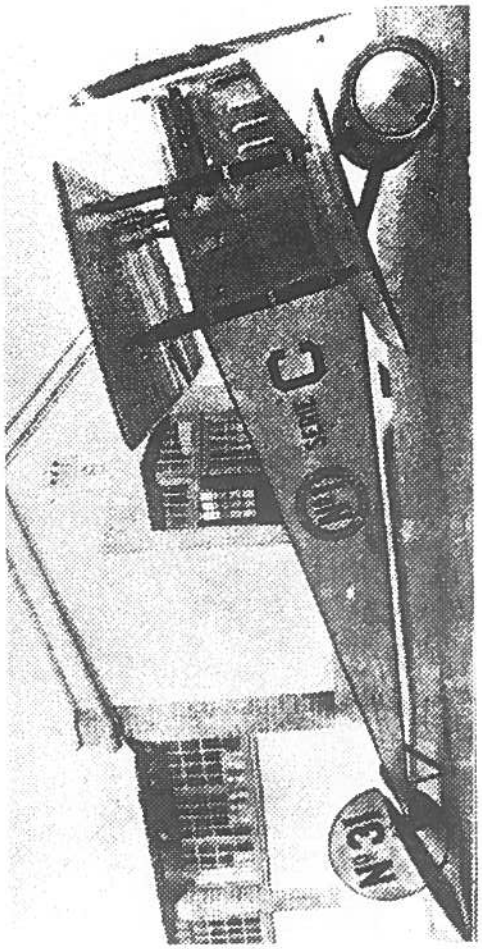
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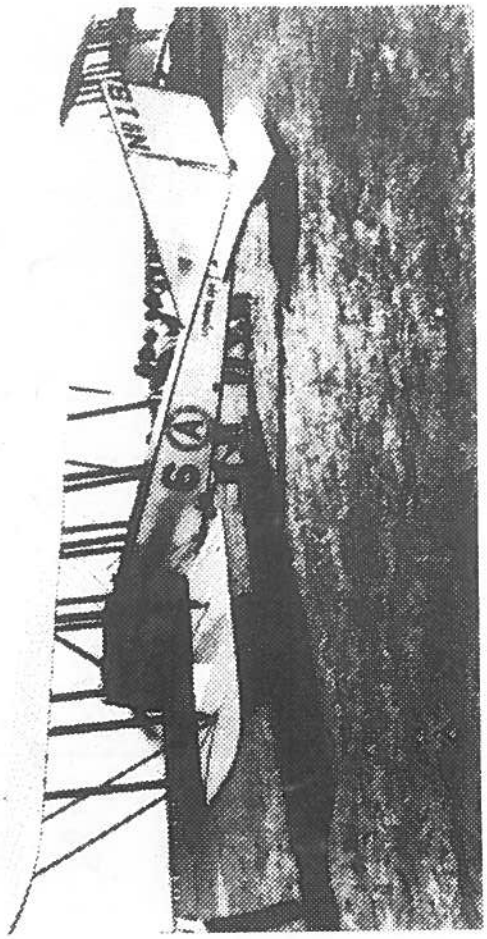
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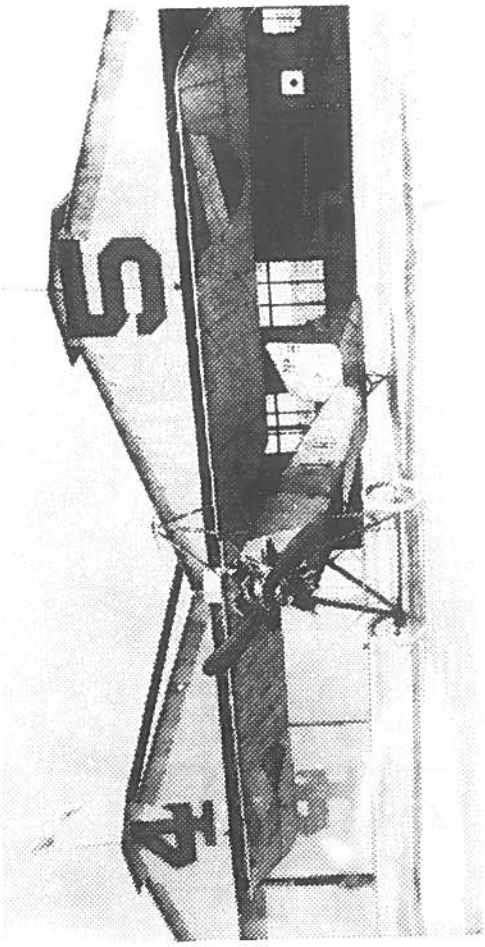
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